

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/introductiontoec00seaguoft

43841

INTRODUCTION

TO

ECONOMICS

UNIVERSITY OF TORONTO LIBRARY

BY

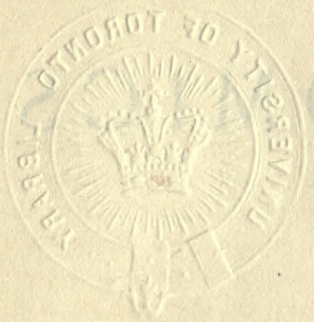
HENRY ROGERS SEAGER

Adjunct Professor of Political Economy in Columbia University

61847
15/2/04



NEW YORK
HENRY HOLT AND COMPANY
1904



COPYRIGHT, 1904,
BY
HENRY HOLT AND COMPANY

THE MERSHON COMPANY PRESS
RAHWAY, N. J.

PREFACE

THE presentation of economics to college classes is a task of no little difficulty. If lectures are depended upon exclusively, much time must be wasted in imparting information that could be acquired more quickly and more surely from the printed page. On the other hand, exclusive reliance on a text-book results in narrowness and dogmatism on the part of both teacher and student. A combination of the lecture and text-book methods offers a means of escape from these difficulties, but to make this satisfactory, a text-book especially designed for the purpose must be used. Such a book should contain not only the information needed, but a systematic exposition of economic principles, intended to introduce rather than to exhaust each topic considered. It need not be elementary because the lectures which supplement it may be relied upon to clear up difficulties. On the other hand, it ought to give some account of the development of economic theories and of the views of the writers who have contributed most to this development.

In writing the following treatise, I have tried to keep these considerations constantly in mind. The principal feature which distinguishes it from other college text-books is its full treatment of the subject of distribution. This is the part of the study which is of greatest interest and importance; yet it is the part most neglected in current manuals. Experience as a teacher leads me to think that the difficulty of making the laws of distribution intelligible is exaggerated. Even if it were not, I should still consider a serious effort to instruct a class in these laws a most valuable exercise in economics. In the following pages I have tried to explain the productivity theory of distribution and have made free use of the writings of my honoured colleague, Professor Clark, who has contributed so much to an understanding of the subject. The fact that I still cling to a modernised Ricardian theory of rent, despite his criticisms of

that doctrine, and that I employ a somewhat different method for measuring the productiveness of labour and capital, does not lessen in the least my obligations to him. While making prominent the laws of competitive distribution, I have tried not to neglect the influence on actual distribution of monopoly, and have devoted four chapters to different phases of the monopoly problem.

Another distinctive feature of the book is the introductory sketch of the rise and progress of modern industry in England and the United States. These chapters are designed to suggest the historical perspective so necessary to the judicial treatment of contemporary problems and, incidentally, to present some of the industrial facts which must otherwise have been deferred to later portions of the book. To secure space for this innovation, I have been compelled to omit the discussion of government revenues and expenditures usually contained in manuals of economics. I have done this the more willingly because within the last few years as many as three excellent treatises on public finance have appeared as fruits of American scholarship.

The bibliographical note at the end of Chapter III. and the references for collateral reading appended to most of the chapters have been added for the guidance of general readers. Asterisks (*) have been used to distinguish the works that are especially recommended.

So many and various are the obligations to other writers of which I am conscious, that a detailed acknowledgment is out of the question. I cannot, however, refrain from recording my special debt to my former teacher and colleague, Professor Patten, of the University of Pennsylvania. To his wholesome distrust of accepted opinions, so ably communicated to his students, I owe more than I can express. I must also acknowledge my indebtedness to Professor Marshall's standard treatise and to the works of Finance Minister von Böhm-Bawerk.

Among those who have read portions of my manuscript, Professor J. F. Johnson of New York University has put me under special obligations by his criticisms. Any merit which may attach to the chapters on money and credit is largely due

to him. My manuscript has also been improved by the suggestions and criticisms of my colleague, Dr. A. S. Johnson, and to him my thanks are due for that most trying service which friendship can command, the correction and revision of my proof. Greatest of all is my indebtedness to my wife, who has helped me at every stage of the work.

COLUMBIA UNIVERSITY, NEW YORK,
December 15, 1903.

CONTENTS

CHAPTER I

The Rise of Modern Industry in England

PAGE

Economics Defined—Its Relation to other Sciences—Politics and Law—History—The Manorial System—Manorial and Modern Systems Contrasted—The Guild System—Merchant Guilds—Craft Guilds—Change from Local to National Regulation—The Black Death—Enclosures—The New System—Contributing Causes—The National System—Debasements of the Coinage—Statute of Apprentices—Monopolies—The Mercantile System—The Industrial Revolution—Mechanical Inventions — Spinning — Weaving — Steam Transportation — The *Laissez-faire* Policy — Abolition of Restrictions — Rise of Factory System—Effects of Factory System—Conclusion, . 1

CHAPTER II

The Industrial Expansion of the United States

Colonial Period—Liberty, Private Property, and Equality—Slave *vs.* Free Labour—The National Industrial Ideal—Physical Characteristics of the United States—The Atlantic Seaboard—The Middle West—The Far West—The New Possessions—Development of Transportation Facilities—Growth of Railroads—Crossing the Continent—Increase in Traffic—Growth of Population—The Foreign and Native Born—The Distribution of the Population—The Negroes—The Foreign-Born—Concentration of Population in Cities—Agricultural Development of the United States—Invention of Improved Implements—Recent Changes—Principal Agricultural Products of the United States—Corn—Hay—Wheat—Cotton—Development of Mining Industries—Iron and Coal—Gold—Silver—Copper—Petroleum—Mineral Products, 1900—Development of Manufacturing Industries—Manufactures of Iron and Steel—Manufactures of Cotton—Concentration in Manufacturing—The Development of Foreign Trade—Changes in Exports—Summary—Conclusion, ... 20

CHAPTER III

Preliminary Survey of the Field of Economics

PAGE

The Motives to Business Activity—Characteristics of the Economic Man—Self-interest—The Larger Self—Love of Independence —Business Ethics—Utility—Free Goods—Economic Goods—Value—Relation between Utility and Value—Value in Use and Value in Exchange—Price—Production and Consumption—The State of Normal Equilibrium—Effort and Sacrifice Involved in Production—The Cost of Production—Work and Pay—The World's Workers—Wages—Property and Its Earnings—The Methods of Economics—Deduction—Induction—Statistics—The Laws of Economics—Necessity of Recasting Economic Laws—Outline of Book—Conclusion—Bibliographical Note, ... 46

CHAPTER IV

The Consumption of Wealth

Characteristics of Human Wants—Law of Diminishing Utility—Present *vs.* Future Goods—Wants Determined by Social Standards—The Law of Demand—The Law of Variety—The Law of Harmony—The Law of Least Social Cost—Adaptation of Consumption to the Environment—Adaptation to Tastes of Producers—Progress Due to Changes in Taste—Adaptation to Laws of Economical Production—Economical Consumption—Nutritive Value of Different Foods—Luxury—Necessaries for All before Luxuries for Any—The Point of View—Fallacies Respecting Luxury—Defensible Luxury—Saving *vs.* Spending —Statistics of Consumption—Consumption in the United States —Family Budgets—Two Aspects of Consumption—Conclusion, 63

CHAPTER V

Value and Price

The Valuations of a Crusoe—Value in Use Depends on Marginal Utility—Valuations Refer to Units of Commodity—Qualifications—Marginal Cost and Value—The Relation between Utility and Disutility—Surplus Utility—Marginal Utility and Value in Industrial Society — Different Goods Valued by Different Classes—Valuation even of Single Goods Complex—Valuation a Social Process—Marginal Cost and Value in Industrial So-

PAGE

ciety—Complications in Calculation of Social Cost—Valuation of Complementary Goods—Factors in Production Complementary Goods—Values in Use and Values in Exchange—Values in Exchange Expressed as Prices—Exchange Values Cannot Increase or Decrease—The Value of Money—Influences Affecting It—The Determination of Prices—Buyers' Calculations—Sellers' Calculations—Four Possible Cases—One Buyer and One Seller—Several Buyers and One Seller—One Buyer and Several Sellers—Two-sided Competition—An Illustration—The Actual Practice—The One-price System—Market Prices—Normal Prices—Summary—Conclusion, ... 81

CHAPTER VI

PRODUCTION: LAND AND NATURAL FORCES

Production Defined—Manufacturing and Trading as Productive as Agriculture—Factors in Production: Nature and Man—Capital—The Productiveness of Land—Progress in Production—Different Characteristics of Different Pieces of Land—Old and New Countries Contrasted—Differences in Expenses of Production Due to Differences in Land—Farming—Manufacturing—Conclusion—The Law of Diminishing Returns—Statement of Law—The Extensive and Intensive Margins of Cultivation—Other Differences in Lands—An Illustration—Suburban and Country Plots of Land Contrasted—City and Country Plots of Land Contrasted—Conclusion—Summary—The Rent of Land, 107

CHAPTER VII

PRODUCTION: LABOUR AND CAPITAL

Labour as a Factor in Production—Qualities Influencing Productiveness of Labourer—Qualities are Either Inherited or Acquired—Health and Strength—Intelligence and Judgment—Ambition, Energy, and Perseverance—Imagination, Ingenuity, and Knowledge—Evolution and Production—Capitalistic Production—Advantages of Capitalistic Production—Capital Goods and Capital—Fixed and Circulating Capital Goods—Specialised and Free Capital Goods—Fixed Capital Increasing—Capital Subject to Law of Diminishing Returns—Also Labour—Methods of Accumulating Capital—Saving and Investing—Borrowing and Investing—Borrowing Not Always for Investment—Capital Goods, Not Money, Saved—Buying Stocks and Bonds Does Not Add to Capital—Kinds of Capital Goods—Land and Capital—Acquired Skill Is Not Capital—Dealers' Stocks Are

PAGE

Capital—Money—Progress in Capitalistic Production: The Middle Ages—The Growth of Commerce—Influence of the Industrial Revolution — Summary — Conclusion, . . . 120

CHAPTER VIII

Production: Co-operation and Business Organisation

Co-operation in Labour—Varieties of Co-operation—Dependence of Co-operation on Development of Markets—The Influence of Improved Transportation Facilities—Qualities Necessary to Effective Co-operation—Such Qualities Developed by Co-operation Itself—The Advantages of Co-operation—The Disadvantages of Co-operation—Other Considerations—Methods of Gauging the Advantages of Co-operation—Statistics of Pin-making in 1776 and To-day—Progress Greatest in Manufacturing—Business Organisation—The Entrepreneur—Qualities of a Good Entrepreneur—The Single Entrepreneur System—The Partnership—The Corporation—Advantages of the Corporation—Its Disadvantages: Diffused Responsibility—Misuse of Borrowing Power—Disregard of Public Interest—Practical Aspects of Corporation Problem—Large *vs.* Small Scale Production—Advantages of Large Scale Production—Division of Labour—Expensive Machinery—Advantages in Transporting Industries—Economy in Buying Supplies—Economy in Connection with By-products—Can Spend More on Experiments—Business Enterprises Classified—The Representative Firm—Summary—Relation between Production and Distribution, ... 137

CHAPTER IX

Production and Distribution

The Different Branches of Production—Graphic Representation of Relation of Different Branches—The Real Incomes of All Classes Are Paid out of Capital—Items in the Expenses of Production—Materials—Insurance Premiums—Interest—Wages—Rent—Taxes—Summary—Differences in Expenses of Production—The Normal Expenses of Production—Active Competition Assumed—Normal Prices Just Cover Normal Expenses of Production—Reasons for Deviation of Market from Normal Prices—The Relation between Production and Distribution—The Problem of Distribution—The Money Income—The Real Income—State of Normal Equilibrium—Graphic Illustration—

PAGE

The Relation between Production and Distribution in the State of Normal Equilibrium—Helpfulness of the Assumption of a State of Normal Equilibrium, ... 155

CHAPTER X

Distribution: Net or Competitive Profits

The Wages of Management—The Wages of Management Set a Minimum below Which Profits Will Not for Any Length of Time Fall—The Wages of Management May Be a Very Large Sum—Conditions Fixed for the Entrepreneur—The Power of Substitution—The Source of Profits Above the Wages of Management—Price Fluctuations a Source of Profits—Explanation—Efforts to Control Prices—The Consequences of the Failure of Such Efforts—Dealings in "Futures"—Dealings in "Futures" Illustrated by Reference to Wheat—The Economic Function of Speculation—Speculation *vs.* Gambling—Conclusions—The Influence on Profits of Rising Prices—Of Falling Prices—Alternations between Prosperity and Depression in the United States—The Influence of Discoveries and Inventions on Profits—Increased Profits of Some Entrepreneurs Offset by Diminished Profits of Others—The Influence of Improvements in Methods of Production on Profits—The Process by which Profits are Eliminated—Change a Cause of Profits—Profits and Losses the Normal Consequences of Progress—The Influence of the Variableness of Climate on Profits—Progress Diminishes Man's Dependence upon Nature—Insurance as a Means of Escaping Consequences of Changing Natural Conditions—Profits and Losses Tend to Balance Each Other—Profits and Rent—Profits in a New Country Usually in Excess of Losses—Practical Problem Connected with Profits Due to Exploitation of Virgin Natural Resources—The Influence of Changes in the Other Shares on Profits—The Effect of Changes in Wages—Summary—Conclusion, . . 169

CHAPTER XI

Distribution: Monopoly Profits

The Nature of Monopoly—Distinction between Monopoly and Differential Advantage—Buyers' Monopolies—The Kinds of Monopoly—The Importance of Different Kinds of Monopoly in the United States—Monopoly *vs.* Competitive Industry—Limitations on the Power of Monopolies—The Power of Substitution—Sugar an Example—Substitution in Connection with a Railroad—Potential Competition as a Check on Monopoly—The Case of the Single Village Store—Competition in Connection

PAGE

with Railroads—The Fear of Governmental Interference a Check on Monopoly—Conclusion in Reference to Efficacy of Checks—The Law of Monopoly Price—A Patented Brand of Soap as an Example—Another Case—Law of Monopoly Price Indicates the Limit of Price Rather than the Actual Price—Complications in Connection with Monopoly Prices—Practice of Asking Different Prices for the Same Goods Not Unusual—Final Statement of Law of Monopoly Price—Reasons for Concealing Monopoly Profits—Methods of Concealing Monopoly Profits—The Overcapitalisation of Monopolistic Corporations—Stock Watering—Difficulty of Measuring Monopoly Profits—Funded Income Defined—The Rôle of the "Innocent Investor" in Connection with Monopolies—Monopoly is Not Necessarily Antagonistic to Public Interest—Desirable Monopolies Should Be Regulated—Monopoly Profits Not Always Large—The Influence of Monopoly Profits on the Other Shares in Distribution—Practical Phases of Monopoly Problem Treated in Later Chapters, ... 188

CHAPTER XII

Distribution: Rent

Contrast between Profits and Other Shares in Distribution—The Nature of Rent—Problems Connected with Rent—The Source of Rent—The Principal Grades of Land Distinguished—Store Sites—Residence Sites—Plots Devoted to Truck-Farming—Farm Land—Grazing Land—Fertility as Important as Situation in Determining Rent—The Demand for Land of Different Grades—Rent Includes Usually a Marginal as well as a Differential Element—The Calculation of Rent—Summary of Explanation of Rent—Graphic Representation of the Theory of Rent—The Rent of Land of Grade D—The Total Rent—Other Causes of Rent—The Rent of Sources of Water Power—The Rent of Mines—Apparent Exceptions to the Law of Rent—The No-rent Margin Found in Connection with Various Uses of Land—The Rotation of Crops Complicates, but Does Not Contradict the Law of Rent—The Average Return the Basis for Calculating Rent—Land Fit Only for One Use May Command High Rent—Other Exceptions—Obstacles to the Exact Calculation of Rent—Investments of Capital in Land and Rent—The Capitalisation of Rent—Rent a Funded Income—Summary of the Theory of Rent—Includes Usually a Marginal as well as a Differential Element—But May Be Calculated as a Differential from the Intensive No-rent Margin—A Surplus Income—Does Not Arise Where Best Land is Superabundant—Its Relation to Law of Diminishing Returns—Return from

PAGE

Permanent Improvements Subject to Law of Rent—Price of Land—Rent Capitalised at Current Rate of Interest—Actual Rent Differs from Economic Rent—The *Métayer* System—The Rent of Buildings Distinct from Ground Rent—Importance of Rent in United States—Rent as a Source of Income in Great Britain, ... 205

CHAPTER XIII

DISTRIBUTION: WAGES

Wages Defined—The Wages Question—Differences in Rates of Wages Due to Varying Capacities of Working Population—Differences Determined in Same Way as Rents—The Relation between Members of Different Groups—Tendency towards Uniformity of Wages in Each Grade—The Different Grades into which Workmen Are Divided Overlap—Workmen below the Margin of Their Group—In Practice the Number of Grades of Workmen is Very Large—The Causal Relation between Marginal and Higher Wages—The Rate of Wages Depends on Demand and Supply for Workmen of Each Given Grade—Differences in Wages Perpetuated by the Immobility of Labour—Efficiency and Time Wages Contrasted—Other Causes of Differences in Wages—Differences in the Cost of Living—Differences in Cost of Mastering Different Trades—Differences in Agreeableness of Different Occupations—Allowance for Dangers Incurred—Allowance for Chance of Success—Social Esteem a Factor—Also Regularity of Employment—Finally Chances of Promotion Considered—Competition Would Make Advantages of Different Employments Equal if Men were Exactly Alike, but They are Not—The Influence of Heredity Indeterminate—The Influence of Habit, Custom, and Education—Differences in Standards of Living Perpetuate Differences in Wages—Educational Opportunities Enjoyed by Children in First Grade—Children of the Middle Class—Their Choice of Occupations—Standards of Living Not Rigid—Children in the Third Grade—The Fourth Grade—The Fifth Grade—Non-competing Groups—Reasons for Failure to Invest More Capital in Education—Conclusion—The Determination of Marginal Wages, ... 222

CHAPTER XIV

DISTRIBUTION: INTEREST

Interest Defined—Interest, Rent, and Wages—Differences in Rates of Interest—The Mobility of Capital Depends upon the Replacement Fund—Differences in Rates of Interest Eliminated

PAGE

by Competition—Differences in the Same Branch of Production—Differences in Different Branches of Production—Causes of Differences in Rates—Monopoly—Interest on Permanent Improvements—Specialised Forms of Capital Have Little Mobility over Short Periods—And Are Consequently Liable to Depreciate—Differences in Risk of Loss—Differences in Social Esteem—Differences in Rates between Different Sections—Interest on Money—Reasons for the Payment of Interest for the Use of Money—Money or Purchasing Power the Form first Assumed by the Replacement Fund—Interest on Money—Loans Made Uniform in Each Money Market—Differences in Risk Cause Differences in Rates of Interest—Differences in Rates of Interest Less Extreme than Differences in Wages—How Marginal Wages and Marginal Interest are Determined—Marginal Rates May be Studied at the Margin of Cultivation—Entire Return at the Margin Constitutes Wages and Interest—The Circumstances Determining the Amount of the Joint Share—The Influence of Entrepreneurs—Qualities and Quantities of Workmen and Capital Goods Important—Both Wages and Interest High in the United States—Workmen and Capital Goods Compete as well as Co-operate—This Competition Leads to Comparisons and Substitutions by which Wage and Interest Rates are Determined—The Law of Distribution for a Society in the State of Normal Equilibrium—The Same Law Applies Roughly to Actual Industrial Society—The Law of Distribution Illustrated—An Increase of Capital Increases the Marginal Productiveness of Labour—The Mutual Interdependence of Shares in Distribution, . 244

CHAPTER XV

Value, Price, and Distribution

Summary of Theory of Value—Exchange Value and Price—The Law of Price—Relation between Incomes of Consumers and the Expenses of Production—The Influence of Monopoly upon the Shares of Income Secured in Competitive Industries—Graphic Representation of Production and Distribution—Restatement of the Law of Rent—Restatement of the Law of Wages—The Wages of Marginal Workmen—The Law of Interest—The Calculation of the Replacement Fund—The Life Period of a Capital Good Depends upon Rates of Wages and Interest—The Law of Interest Applies to Gross Earnings of Capital Goods—Restatement of the Law of Competitive Distribution—The Same Law Generalised—True

PAGE

Relation between Expense of Production and Value—The Determination of Shares in Distribution a Complex Form of Valuation—The Productivity Theory of Distribution—The Exchange Theory of Distribution—Interest a Discount on Future Goods—The Exchange Theory True from Viewpoint of Lenders—The Sense in which Capital Goods are Productive—Exchange and Productivity Theories Complementary, Not Contradictory—The Wages-fund Theory—Conclusions Drawn from the Wages-fund Theory—Criticism of the Theory—Other Objections, and Conclusion, ... 265

CHAPTER XVI

VALUE, PRICE, AND DISTRIBUTION (*Concluded*)

Ultimate Determinants of Distribution—Statistics of Population—Significance of These Statistics—Birth, Death, and Marriage Rates of Principal Countries—Comment on the Table—The Malthusian Doctrine of Population—Influence of the Doctrine on Economic Thought—Criticism of the Doctrine—Premisses in Reasoning about Population—The Physiological Check—The Influence of Social Customs—The Economic Check—The Influence of the Standard of Living—A Stationary Population—Conditions Necessary to a Low Birth-rate—Causal Relation between the Standard of Living and Wages in the United States—Population Should Grow at the Top, Not the Bottom—The Influence of Immigration and Emigration—The Growth of Population Controlled by Standards of Living—The Growth of Capital—The Growth of Wealth in the United Kingdom—In the United States—Growth of Agricultural and Manufacturing Capital—Necessary Cautions—Present Preferred above Future Goods—Reasons for this Preference—The Motives to Saving—Progress Strengthens These Motives—The Ultimate Determinants of Distribution—The Balancing of Utilities against Disutilities, . . 283

CHAPTER XVII

MONEY AND THE MONETARY SYSTEM OF THE UNITED STATES

The Disadvantages of Barter—The Nature and Functions of Money—Money a Standard of Value—Also of Deferred Payments—Prices and the Value of Money Vary Inversely—Stability of Value a Desirable Attribute of Money—Various Commodities Used as Money in the Past—Qualities Needed in a

PAGE

Good Money—The Rôle which the State Plays in Connection with Money—Coinage and the Printing of Paper Money—Standard, Token, and Credit Money—Gresham's Law—An Illustration—Gresham's Law and the Present Monetary System of the United States—The Adoption of the Gold Standard in Europe—Its Adoption Outside of Europe—Monetary History of the United States—The Gold Standard Law—Present Monetary System of the United States—Gold Coin Kept at a Constant Parity in Value with Gold in Coin—How the Parity between Gold and Silver Coin Is Maintained—History of United States Notes—The Gold Reserve—National Bank Notes—Stability of the Gold Standard—The Limping Standard—The Silver Hoard—Objections to Sale of Silver Dollars—The Function of Token Money—Token Money of the United States—The Function of Credit Money—Objections to Credit Money—Credit Money of the United States—Conclusion, ... 302

CHAPTER XVIII

CREDIT AND BANKING

The Nature of Credit—Book Credit—The Banking Business—Based on Confidence—The Check System—Checks and Drafts—Money and Credit—Importance of Deposits to Banks—Forms of Bank Loans—Call and Time Loans—Banks Lend Their Credit by Means of Deposit Accounts—Or Bank Notes—Interest on Bank Loans—Paid for Control over Capital—Gold Coin is Capital—Credit is Not Capital, but it does the Work of Standard Money—Limitations on the Use of Bank Credit—Interest on Call Loans Usually Low—Short-time Loans—Competition Adjusts Bank Rate of Interest to General Rate—Ought Banking to be Regulated?—Reasons for Favouring Regulation—History of the National Banking System—The Present Law—Protection for Depositors—Faults in System—United States Bank Notes are Perversely Elastic—Freer Note Issue Necessary—Defect in Reserve Requirements—State Banks—Savings Banks—Trust Companies—Conclusion, ... 323

CHAPTER XIX

SOME UNSETTLED MONETARY PROBLEMS

Unsettled Problems—The Value of Gold and Prices—Demand for Gold in Arts—Monetary Demand—Not Unlimited—Money and Credit—Recent Fluctuations in Monetary Demand—The Re-

PAGE

serve Demand—Conclusion in Reference to Demand—The Supply of Gold—Probable Future of Gold Supply—Measuring the Value of Money by Method of Index Numbers—Defects in the Method—Relation between Value of Money and Level of Prices—Price Statistics—Reasons for Fluctuations in Prices—The General Trend of Prices—Statistics Not Exact—International Bimetallism—The Time for it Probably Passed—The Silver Question in the United States—The Probable Consequences of the Free Coinage of Silver—The Future of the Gold Standard—The Multiple Standard, ... 345

CHAPTER XX

FOREIGN EXCHANGE AND THE TARIFF QUESTION

The Nature of Foreign Exchange—Anglo-American Trade—Sterling Exchange—The Gold Points—The Rate of Sterling Exchange—The Rate of Interest and Foreign Exchange—Prices of Stocks and Foreign Exchange—Prices of Commodities and Foreign Exchange—Ways of Quoting Foreign Exchange—Three-cornered Exchanges—Exchanges between Gold and Silver Standard Countries—A Country's Gold Supply Regulates Itself—The United States Should Normally Export Gold—Foreign and Domestic Trade Compared—Peculiarities of Foreign Trade—Principle Controlling Foreign Trade—The Policy of Protection—The Advantages of Free Trade—History of Protection in the United States—The Home-market Argument—The Infant-industry Argument—Argument of List—Protection in the United States Since the Civil War—The Wages Argument—Political Ideal of Protectionists—The Tariff of 1897—The Burden of Protection—Complexity of the Tariff Question—Present Status of the Tariff Question in the United States—The Strength of Protection—Opposition to Protection to Trusts—Folly of Protecting Exploitation of Limited Natural Resources—The Burden of Protection to Producers for Export—Retaliatory Tariffs—The Future—Free Trade—The Present Trade Policy of the United Kingdom—The Free-trade Movement, 1860-1870—The Protectionist Reaction—The Present Outlook Abroad, ... 361

CHAPTER XXI

THE LABOUR MOVEMENT

Obstacles to Free Competition in the Labour Market—The Disadvantages of Wage-earners as Bargainers—Competition by Employers an Active Force—Nature of the Labour Movement—Objects of Labour Unions—The Membership of American

PAGE

Unions—Of British Unions—Importance of Legal Questions —The Development of Trade-union Law in the United Kingdom—Growth of Unions—English Law of Conspiracy—Labour Unions Liable for Damages—The Law in Reference to Labour Unions in the United States—The Influence of English Precedents—The Benefit Features of Labour Unions—Collective Bargaining—Employers' Objections to Collective Bargaining—Conclusion—Strikes and Lockouts—Use of the Boycott in the Coal Strike—Difficulty of Enforcing Law during Strikes—Plans for Avoiding Strikes—Trade Agreements—State Board of Conciliation and Arbitration—Reasons for Government Interference—Compulsory Arbitration—New Zealand's System—The System of New South Wales—Use of the Injunction in Connection with Strikes—Legal Justification—Extension of Scope of Injunctions—Reasons for Opposing Resort to Injunctions—The Influence of Labour Unions on Wages—The Case of Open Unions—Labour Unions Sometimes Monopolies—State and Federal Laws Helpful to Unions—Monopolistic Unions to be Condemned Like Other Monopolies—Educational Work of Labour Unions—Schools of Citizenship—Active in Securing Needed Labour Laws—The Future of the Labour Movement, ... 385

CHAPTER XXII

The Legal Regulation of Labour

Reasons for the Legal Regulation of Labour—Employees Do Not Always Bargain on Equal Terms with Employers: Children—Women—Men—Dangerous Trades—Object of Protective Laws —History of Labour Legislation in Great Britain—1802-1831—Act of 1833—Mining Act of 1842—The Present Law—Constitutionality of Labour Laws in the United States—Conflicting Decisions of American Courts—Decision in Utah Eight-hour Law Case—Value of this Precedent—Child-labour Laws in the United States—Purpose of Such Laws—Laws Regulating Labour of Women—The Agitation for a Universal Legal Eight-hour Day—Objections to Plan—Restrictions of Labour of Men Defensible—The Sweating Evil—Conditions in the Clothing Trades—Remedies Tried in Great Britain and the United States—Australasian Experiments—Conclusion—The Regulation of Dangerous Trades—System in Great Britain —Employers' Liability in the United States—The Workmen's Compensation Act of Great Britain—Continental Systems—Backwardness of the United States in This Field—Arguments for and against the Legal Regulation of Labour—Need of Uniformity in the United States—The Future, . . . 412

CHAPTER XXIII

Legal and Natural Monopolies

PAGE

Importance of the Monopoly Problem—Public Legal Monopolies—Purposes of Such Monopolies—The United States Post-office—Private Legal Monopolies in Great Britain—In the United States—The Patent System—Arguments for and against Patents—Objections Answered—Proposed Reforms in the Patent System—Patents as a Source of Monopoly Profits—Registered Labels and Trade Marks—The System of Copyright—Defects of American Law—Natural Monopolies in the United States—Natural Monopolies of Situation—The Anthracite Coal Combination—Its Present Status—Need of Regulation—Other Monopolies of Situation—Natural Monopolies of Organisation—The Business of Supplying Water—The Gas and the Electric Light Monopolies—The Street Railway Monopoly—Reasons for Combination—Advantages of Combination—The Telephone Monopoly—Advantages of Monopoly—Methods of Increasing Telephone Rates—Monopoly Profits of Municipal Monopolies in the United States—Such Profits Now Capitalised—The Solution of the Municipal Monopoly Problem—Arguments for Public Ownership—Against Public Ownership—Other Considerations—Situation in the United States—In Europe—Methods of Regulating Municipal Monopolies—Obstacles to Regulation in the United States, ... 434

CHAPTER XXIV

The Railroad Problem in the United States

National Monopolies of Organisation—Circumstances Making the Railroad Business Monopolistic—Progress toward Concentration in the Railroad Business in the United States—Discrimination in Railway Rates—Between Commodities—Between Places—Between Persons—Reasons for Discriminations—Case of the South Improvement Company—Monopoly Profits from the Railroad Business in the United States—National Regulation—The Interstate Commerce Act—Defects in the Act—Its Interpretation by the Courts—Amendment of 1903—Arguments for and against National Operation of Express and Telegraph Businesses—Arguments for National Ownership and Operation of the Railroads—Argument against the Policy—Other Considerations—Need of Reform in Interstate Commerce Act—Changes Recommended by the Commission, 460

CHAPTER XXV

Capitalistic Monopolies, or Trusts, in the United States

PAGE

Capitalistic Monopolies or Trusts—Motives for Organisation of Trusts—The Early Trusts—The Present Trusts—Organisation of the United States Steel Corporation—The Earlier Trusts—Progress of the Trust Movement—The Motives of Manufacturers—The Activity of Promoters—Reasons for Formation of Steel Trust—Distrust of Trusts on the Part of the Public—The Successful Trusts—Extent of Control of Trusts over Production—Resulting Control over Prices—Limits to this Control—Conflicting Opinions in Reference to Trusts—Economies Effected by Trusts—Reduced Expenses for Advertising—Saving in Cross Freights—Better Adaptation of Production to Demand—Minor Advantages—Illegitimate Practices of the Trusts—Obtaining Rate Discriminations from Railroads—Price Discrimination among Places—Unfair Contracts with Dealers—The Tariff and the Trusts—The Tariff the Mother of Some Trusts—Other Evils—Overcapitalisation—Corruption of Public Officials—Excessive Prices for Trust Products—The Constitutional Obstacle to Legal Regulation of the Trusts—The Common Law—Anti-Trust Legislation—The Ohio Act of 1898—Futility of Anti-Trust Acts—The Present Status of the Trusts—Published Reports now Required by National Government—Plans for Drawing Legal Control over the Trusts—Such Control Should be Exercised by the Federal Government—Voluntary Federal Incorporation Advocated—The Regulations Needed—Suppression of Practices Leading to Unfair Competition—Reform of Tariff on Trust Products—The Future of the Trusts—Power of Substitution a Weapon for Controlling Monopolies, ... 476

CHAPTER XXVI

Plans of Economic Reform

Four Plans of Economic Reform—Profit-sharing—Objections to the Sliding-scale System—Objections to Sharing Losses—Other Plans of Profit-sharing—Labour Copartnership—in Great Britain—The English Co-operative Wholesale Society—The Scottish Society—Present Status of Copartnership—Reasons for Backwardness of the United States—Reasons for Success and Failure of Co-operative Experiments—The Future of Labour

PAGE

Copartnership—Land Nationalisation—Advantages of Private Property in Land in Great Britain—In the United States—The Present Problem—Evils of Absentee Landlordism—The Situation in the United States—The Single Tax—Objections to the Single Tax—It Is Inadequate—It Would Involve Wholesale Confiscation—Impossible to Administer—Peculiarities of the Land Tax—Land and Improvements Should be Distinguished—The Capitalisation of a Tax on Land—Burdenless Taxes—The Arguments for Inheritance Taxes—Plan of Combining Inheritance and Land Taxes—Conclusion—Socialism—Communism—Plans for Realising Socialism—Economic Advantages of Socialism—Moral Advantages—Objections to Socialism—Difficulty of Apportioning Labour Force Economically—Difficulty of Valuing Goods—Difficulty in Connection with Capital—Progress under Socialism—Conclusion—The Socialism of Karl Marx—Criticism—Conclusion, ... 510

CHAPTER XXVII

Economic Progress

The Nature of Economic Progress—Changes in Wages and Hours of Labour—Progress in Consumption—Increased Variety—Increased Harmony—Reduced Costs—Increased Economy—Consumers' Leagues—Progress in Production—Progress in Distribution—Reasons for Persistence of Low Wages—Influence of the Growth of Population—Economic Justification of Competitive Profits—Monopoly Profits—Rent and Interest—Justification of Rent—Justification of Interest—Unequal Distribution of Wealth Results from Inequalities among Individuals—Inheritance Taxes—Progress in the Future—The Function of Labour Unions—Of Labour Laws—The Regulation of Monopolies—Of Housing Conditions—Free Public Schools—Tax Reform—Progress Depends on the Individual—Probable Course of Wages, Interest, and Rent in the Future—Economic Progress and the Moral Elevation of the Race—The True Goal of Economic Progress — Conclusion, ... 537

CHAPTER I

THE RISE OF MODERN INDUSTRY IN ENGLAND

Economics Defined

§ 1. Economics, or political economy, is the social science which treats of man's wants and of the goods (*i. e.*, the commodities and services) upon which the satisfaction of his wants depends. It analyses wants, classifies goods with reference to them, and considers all of the circumstances which affect the production and distribution, or sharing, of goods among the individuals who compose society. In discussing production and distribution economists treat the same problems that engage the attention of business men, but from a social rather than an individual point of view. It is to emphasise this distinction that economics is styled a "social science." A definition easy to remember is that economics is the "social science of business."

Its Relation to Other Sciences

§ 2. Closely related to economics are the other social sciences, sociology, politics, law, and history. By some writers sociology is made to include all of the social sciences, not excepting economics. Others define it as the science which treats of the beginnings of society and of the first principles of social organisation. Still a third group understands the term to include problems connected with society's treatment of its dependent classes. Whichever of these definitions is accepted, the relation of sociology to economics need cause no confusion. The latter has to do primarily with contemporary conditions and with the relations between independent, self-supporting individuals and families, and the goods upon which their well-being depends.

Politics and Law

Politics treats of the political organisation of society, and law is the aggregate of rules and regulations through which formal expression is given to the social will. Neither is likely to be mistaken for economics, although both influence largely the business institutions and practices with which economics is concerned. The political organisation determines what classes shall have a dominant influence in choosing the laws that are to be passed and enforced, and laws themselves establish standards to which all must conform. The solution of most of the practical economic problems which are discussed in later sections of this work will be found to hinge upon the repeal of unwise laws or the enactment of wise ones.

History

History, in the broadest sense, is the narrative of past events. To the economist economic or industrial history, the narrative of past events touching relations between men and goods, is of special significance. In fact, a knowledge of the principal facts of modern industrial history is so necessary to an understanding of present economic phenomena that it has seemed wise to introduce this work with a sketch of the Rise of Modern Industry in England, and of the Industrial Expansion of the United States.

The Manorial System

§ 3. The earliest form of industrial organisation of which we have full knowledge from English history is the "manorial" system. In existence before the Norman Conquest, it was not entirely superseded until the sixteenth century, and, therefore, controlled English industrial activity for a longer period than any system which has since developed. To understand it clearly it is necessary to remember that during the period when it flourished international intercourse took the form of fighting more commonly than that of trading, that each country was economically self-sufficient or nearly so, and that in order to maintain itself each community was forced by its ignorance of efficient industrial processes to give nearly all of its time to providing for the satisfaction of its primary wants, for food, clothing, and shelter. The manorial system was thus, on one side, a method of organising the nation for military purposes and, on the other, a plan for securing the cultivation of the soil. It is the latter aspect which interests the economist.

The manorial system was at its height about the middle of the thirteenth century. At that time the whole cultivated portion of England was divided up into estates or "manors" averaging about 5000 acres in extent. The actual work of tillage on these manors was performed for the most part by serfs or "villeins," whose position was, from our modern point of view, peculiar. The villein was not a slave, and yet he could not legally leave the place in which he was born or neglect his customary work without the consent of the lord of the manor. On the other hand, although he did not own the allotment of land which he cultivated, he was entitled to it by immemorial usage and might appeal to the manorial court for redress if it was withheld from him. The method of tillage was even more remarkable. Instead of being divided up into a number of separate farms or allotments, each to be cultivated independently and continuously by the same tenant, the arable land of the manor was divided up into three great fields, hundreds of acres in extent, each one of which was planted with a single crop. The usual practice was to sow one field with wheat or rye, another with oats or barley, and to allow the third to lie fallow as a preparation for the heavy crop to be grown the following year. The ordinary allotment made to a villein was some thirty acres, assigned usually in half-acre or acre strips from different parts of the farm. By this plan the villein was enabled to participate in the different kinds of agriculture carried on in the different fields, while at the same time he received a share of the good as well as of the poor land. He paid for his allotment, not with money, but with labour, and the amount of labour was fixed by immemorial custom.

The most important labour was "week-work," *i. e.,* work on the land which the lord retained for himself for two or three days each week throughout the year, and "boon-day" work or continuous work on the lord's land for one or two weeks during the ploughing season and the season of harvest. In addition certain presents and special services were required of the villein at stated seasons.

The manorial system was so different from that which now prevails in the Western World that it will be desirable to indi-

Manorial and Modern Systems Contrasted

cate some of the more important points of contrast. In the first place, fully nine-tenths of the population of England lived in the country on these manorial estates, and the larger part consisted of the villeins and their families. To-day in Great Britain nearly two-thirds of the people live in cities of 10,000 or more inhabitants. Secondly, most of the inhabitants of the manor were condemned to live and die where they were born, and few of them ever visited other places or came in contact with other ways of living. The difficulty and danger of travel, the scarcity of money and other forms of wealth that might be treasured up and easily transported, and the poverty of those of the villein class, were all conditions serving to reinforce the legal obstacles to the free movement of population from one part of the country to another. It was a rigid system of status in which children were forced to follow in the footsteps of their fathers and only those of rare ability could hope to rise above the positions to which they were born. Thirdly, each villein family produced for itself practically everything it required. The few exchanges in which villeins participated consisted in the barter of their products for the small quantities of salt, iron, and other foreign goods, which they needed and could not produce for themselves. Under these circumstances the stimulus of competition, so active where production is for the general market, was almost entirely absent. The result was that slow development of industrial processes which made the perpetuation of the system for so many centuries possible. The crops to be sown and the methods of cultivation had become matters of tradition and the idea of improving upon the wisdom of the fathers touching these subjects was foreign to the thought of the age. Thus generation followed generation, dividing up the land in the same way, using the same crude implements, subsisting on the same sorts of food, dwelling in the same sorts of houses, and wearing the same sorts of clothes. Fourthly, as already stated, money was almost unknown to dwellers on the manorial estates. Between the products of their labour and the commodities they themselves desired, there was no confusing intermediary to leave them uncertain whether they were receiving all to which they were entitled. Thus the mediæval state was largely relieved of one of the most serious economic

responsibilities of a modern government, the duty of supplying a good medium of exchange.

The Guild System

§ 4. Contemporaneous with the manorial system in the country was the guild system in the town. To understand the latter it is necessary to remember that towns grew up as centres of trade and that their populations were made up in part of persons who had broken away from the restraints of manorial life. The result was constant friction between the inhabitants of the towns and the nobles who so largely dominated the country. At the same time there was in progress a struggle between the latter, who were jealous of the royal power, and the king, which made an alliance between king and townspeople so natural as to be almost inevitable. The king guaranteed the dwellers in the towns special privileges, confirmed usually by royal charter, while in return the townspeople promised special contributions to the royal exchequer and unswerving loyalty in time of emergency.

Merchant Guilds

Since trade was the primary purpose of the town, trading privileges were those first demanded, with the result that practically whole towns were incorporated as trading or "merchant guilds." The privilege was usually confined to a monopoly of trade in all but the most necessary articles within the town itself. Often, however, the privilege embraced the trade in certain products in other towns or even throughout the kingdom. Interesting features of the merchant guilds were the minute rules by which they regulated the conduct of their members in reference to buying and selling. In this respect they were not unlike modern stock exchanges, except that the rules of the strictest exchange are lax in comparison with those of the merchant guild. The purpose of the rules of the latter was to promote fair dealing, fraternal relations between members, and, in general, a regard for the interests of the trade as a whole, in place of exclusive regard for individual gain in special transactions. Such matters as the times and places for holding particular markets, the qualities of goods to be dealt in, and the methods of bargaining to determine prices came in for special regulation. The enforcement of these rules was entrusted to wardens or inspectors appointed from guild members, and the punish-

ments inflicted on transgressors ranged from public censure to fine, imprisonment, and expulsion from the guild.

Craft Guilds

As the towns grew they came to be the seats of various handicrafts, and within one hundred years after merchant guilds were organised "craft guilds" began to be formed. These were unions of the artisans engaged in each particular handicraft and were designed partly to promote honest work, fraternal relations, etc., as in the case of the merchant guilds, and partly to secure for their members the right to trade in their own products. Like the merchant guilds, the craft guilds formulated and enforced most minute regulations concerning the conduct of their members. Thus, night work was frequently prohibited, weights and measures were regulated, and the adulteration of goods was forbidden.

As voluntary associations of nominal competitors both merchant and craft guilds undertook to restrain competition in the interest of the whole trade. They rendered for their members many of the services, such as protecting their persons and property, which are now performed by the state or government; but in addition they bound their members not to pass beyond certain limits in their competition with their guild brothers lest the interests of the corporate group should suffer. Thus in the towns, as in the country, competition was much restricted at this period and in its place local customs and local regulations largely determined the direction of industrial activity.

In the towns the institution of private property was more highly developed than in the country, since most town wealth was personal and the effective utilisation of town land required it to be more completely under the control of the person using it. At the same time, a town "common," or piece of land used in common by all the townsfolk, was a usual feature of town organisation, and in other ways the original connection of the towns with the manors was shown.

Change from Local to National Regulation

§ 5. The decay of the manorial system and of the guilds was so gradual that it is difficult to trace its progress. The first great change was a substitution of money payments for the labour dues formerly required of villeins. This was part of a general substitution of money exchanges for barter in all departments of industrial life and probably did more than

anything else to break down the mediæval and usher in the modern system of industry. The change was made possible for England by the active demand for her wool on the Continent, especially after the Crusades in the thirteenth century, which did much to develop international trade. In exchange for wool, silver was imported, and this was coined and gradually put into circulation in all parts of the country. Lords of manors did not oppose the change because it was clearly to their advantage to permit their villeins to substitute money payments for their labour dues, so long as they could hire labour as it was required, particularly in cases where their lands could be profitably converted into great sheep runs.

The Black Death

The last attempt to perpetuate the old system was made after the terrible epidemic known as the "Black Death" (1348), which carried off from one-third to one-half of the population of the country. As a result of this frightful mortality labour became scarce and dear. Rather than pay the high money wages demanded, the lords of manors and the king united in the attempt to compel the villeins to make the same labour return in exchange for their allotments as under the old service system. "Statutes of Labourers" ordering workmen to accept the customary wages were passed in 1351, and subsequent years, but they seem to have had little practical effect. The Peasants' Revolt in 1381 seems to have been in part due to the bitter feeling engendered by these statutes, and though not immediately successful, it helped forward the transition from older conditions to newer ones which were more favourable to labour. The onerous labour dues required of villeins had been so far given up by 1400 that the succeeding century has been styled "the golden age of the English labourer."

Enclosures

The same cause which made possible the introduction of a money economy stimulated another tendency that was on the whole advantageous, the enclosure of lands that had previously been allotted to villeins or held in common and their transformation into great sheep ranches. The higher the price of wool the greater the profit to be reaped by the lord of the manor from converting his whole estate into a sheep run. When, by the Black Death, the dearness of labour was added to the dearness of wool as an inducement in this direction, "enclosing"

proceeded at a rapid rate, with the result that agricultural land came more and more to be private property as it is now understood in the United States.

The New System

As a consequence of these changes, and others of subordinate interest, English rural life had, by the beginning of the sixteenth century, assumed something of its modern character. The cultivators of the soil continued to produce for themselves most of the commodities they consumed, but no longer under a system of joint labour. They still raised about the same crops, but there was not the dull uniformity of the earlier period, and some improvement in methods had been made. In each agricultural district market towns had grown up to which farmers brought such of their products as were saleable and where they bought some of the commodities they could not produce advantageously for themselves. They paid money rents for their lands and if they worked for others received money wages as their compensation.

The changes in the towns were as marked as those in the country. With the strengthening of the central government, the guilds, and especially the merchant guilds, were deprived of one of the chief objects of their existence, that is, the protection of their members. Moreover, trade had become so much more extensive and important that the practice of giving associations with limited membership monopolies of its different branches was felt to be inexpedient. The loss of their monopoly privileges was fatal to the merchant guilds as industrial organisations, and those which continued in existence became mere social or religious clubs.

The craft guilds survived for a longer period, but many of their functions also were assumed by the national government and the scope of their influence was narrowed. The immigration of foreign artisans was also a circumstance tending to lessen their importance, though they did not relinquish their monopolies without vigorous and in some cases prolonged resistance. By 1600 the guilds had ceased to be the dominant influence shaping town life.

Contributing Causes

The most marked characteristic of the period which succeeded was national regulation of industry. This was ushered in by a series of events which can be only mentioned in passing.

The accession of Henry VII. to the throne in 1485 gave the country a strong ruler just at a time when protracted civil war had prepared the people for sweeping changes. The centralising policy which he inaugurated was continued by Henry VIII. and Elizabeth, neither of whom lost an opportunity to substitute national for local control and regulation. These changes were favoured by the invention of printing, which fostered the national literature, and by the discovery of America and of the ocean route to the Orient, which stimulated the national ambition. Henry VIII.'s quarrel with the Pope, on the subject of his divorce, severed the religious bond that attached England to the Continent. In becoming head of the Church as well as head of the State, Henry did much to exalt the importance of the crown in the eyes of his subjects. Through these influences national life was stimulated and reliance on the general government increased. The result was the industrial organisation which for lack of a better name may be described as the "National System."

The National System

§ 6. The extent to which the general government undertook to regulate industry in England in the time of the Tudors is to-day hardly credible. We are so accustomed to the idea that the state should interfere as little as possible with business that the contrary system, in which regulation is relied upon usually and competition only under exceptional circumstances, is difficult to imagine. And yet this was the condition until comparatively recent times in England and in most European countries.

The practice of the Tudor sovereigns was not different in principle from that of their predecessors. Henry III., for example, caused an "Assize of Bread and Ale" to be issued in 1267, which prescribed standard weights for the farthing loaf of bread, varying with the price of wheat, and required municipal authorities throughout England to enforce the regulation. Even before this an "Assize of Cloth," issued in 1197 by Richard I., had declared that all woollen cloth made in England should be twenty-four ells * in length, and had appointed inspectors or "aulnagers," to confiscate pieces falling below this standard. But the Tudors established and maintained for

* An ell was forty-five inches.

more than a century a strong central government and enforced, as had no earlier sovereigns, their national regulations.

Debasements of the Coinage

Henry VIII.'s arbitrary modifications of the monetary system, made when he was hard pressed for revenue, illustrate a bad phase of national regulation. On two different occasions, under cover of effecting a recoinage of the worn and mutilated money of the country, he caused the silver coins in circulation to be withdrawn and put out in their place coins which not only were lighter in weight, but contained a smaller proportion of silver. Under his successor, Edward VI., this policy of debasement was carried so far that for a time the standard coin contained only one part of silver to three parts of alloy. A modern government might carry through such a policy once, but the attempt to repeat it three or four times within a few years would certainly precipitate a revolution.

Statute of Apprentices

Under Elizabeth, governmental regulation took a happier turn. More politic than her father, she was never led by lack of revenue to disregard so completely the nation's interests. The most important piece of industrial legislation of her reign was the "Statute of Apprentices," enacted in 1563. This comprehensive measure undertook to regulate the relations between masters and their journeymen and apprentices with the same minuteness that was characteristic of the guilds. "It made labour compulsory and imposed on justices of the peace the duty of meeting in each locality once a year to establish wages for each kind of industry. It required a seven-years' apprenticeship for every person who should engage in any trade; established a working day of twelve hours in summer and during daylight in winter; and enacted that all engagements, except those for piece work, should be by the year, with six months' notice of a close of the contract by either employer or employee." * Besides these general regulations it contained others of a more special character, the enforcement of which would have left very little scope to competition to determine any of the relations between workmen and their employers.

Monopolies

Another form of interference with industry very common during the reign of Elizabeth was the granting of monopolies. The most defensible were the great trading monopolies, such

* Cheyney, *Industrial and Social History of England*, p. 156.

as the "East India Company," chartered in 1600, which had to incur very heavy expenses in establishing trade with distant lands and could hardly hope to recover the sums invested unless protected by a monopoly, at least for a term of years. But other monopolies were granted with equal readiness. Among the articles whose production and sale were thus restricted to particular individuals towards the close of Elizabeth's reign were currants, salt, iron, powder, playing cards, calf-skins, hides, potash, vinegar, coal, steel, aqua vitæ, brushes, bottles, saltpetre, lead, oil, glass, paper, starch, sulphur, and new drapery. Even the personal popularity of Elizabeth did not prevent an outbreak when this list was read in Parliament, and she was forced to promise to revoke some of the more obnoxious grants.

The Mercantile System

§ 7. Consistent with this treatment of industries carried on in England was the policy towards foreign trade known as the "Mercantile System," which was pushed to the greatest lengths during the seventeenth century. The central idea of this system was that the sure index of increasing national wealth is an increasing national supply of the precious metals. In harmony with this view it was held to be the essence of sound commercial policy to export commodities of high value and to import in return commodities of low value plus specie. The difference in value between commodity exports and imports was called "the balance of trade," and a balance on the side of exports was styled "favourable" because it was thought to entail an importation of gold or silver.

One of the most obvious regulations dictated by mercantilist theory was the prohibition of the export of the precious metals. Such a regulation had been enacted in England as early as 1381 and it was continued as regards English coin until so late a date as 1816. To encourage the exportation of commodities, bounties were frequently paid, such as the famous corn bounty introduced during the reign of William III., in 1689, and continued until England ceased, even in years of abundant harvests, to be an exporter of the grains. To discourage imports—except gold and silver—a great variety of measures were resorted to, ranging all the way from low duties to absolute prohibitions. Discriminating duties on imports from

certain countries, such as France, trade with which showed normally an unfavourable balance, were also common. Closely related to these trade regulations was the colonial policy approved by the thought of the age. The mother country sought to limit the industries of her colonies to the production of raw materials and to monopolise the trade consisting in the importation of these materials and the exportation to them of needed manufactured articles.

Other examples of governmental interference might be given, but enough has been said to indicate how completely every department of industrial activity was subject to governmental regulation. The place of the local regulations which lost their force with the decline of the manorial and guild systems was largely filled by these new national regulations, and the field left to individual enterprise and competition was still very restricted. Only gradually did the conviction dawn in the minds of English statesmen that free competition is, for many relations of industrial life, a more effective regulator than government inspectors, backed though they be by the whole power of government police. This conviction did not bear fruit in a modification of national policy until after what has been styled the "industrial revolution."

The Industrial Revolution

§ 8. In 1750 England's industrial future was, to say the least, problematical. Her iron industry was in a declining state in consequence of the destruction of her forests, from which the charcoal, still used in smelting iron ore, was obtained. Coal mining was becoming more and more costly because of the difficulty of keeping the mines free from water. Manufacturing still retained its etymological significance of "making by hand" (*manu, facere*), and England was little more favourably situated than other countries to develop textile and other manufactures by hand processes. In agriculture much progress had been made since the sixteenth century, but the smallness of the country precluded any great development along agricultural lines. Finally, the country was on the eve of a great struggle with France to determine which should be the dominant power in America and India, and this struggle might well cause anxiety in England, since France was larger in area and three times as large in population. In the light of

this situation no one would have ventured in 1750 to predict for England the marvellous growth which she was about to experience.

Mechanical Inventions

The new factors which started the industrial revolution before the end of the eighteenth century and made England for the greater part of the nineteenth the leading manufacturing country of the world, were inventions which brought about the substitution of power machinery for hand labour in many fields of industry and enabled England to utilise on a great scale her magnificent coal and iron resources. Of these the most important, although not the earliest, were James Watt's improvements in the steam engine. His single-acting pumping engine was patented in 1769 and his double-acting machinery-propelling engine in 1782. The first was applied to work a bellows in an iron foundry even before it was set up in 1777 to pump out a Cornish coal mine. In both connections it proved incomparably superior to the Newcomen engine which it superseded. The double-action engine was first employed to run a cotton mill in 1785, and that date marks the turning point in England's history as a manufacturing country. In its use to furnish a blast for smelting iron ore by means of bituminous coal the steam engine cheapened machinery; in its use to keep coal mines free from water it cheapened fuel; finally, in its use to propel cheap machinery by the aid of cheap coal it enabled English manufacturers to undersell all competitors in foreign markets.

Spinning

By itself the steam engine did not accomplish this result, since the machines which it was to propel had also to be invented. In 1750 both spinning and weaving were hand processes, and even before Watt was occupied with his engines other inventors had been busied with the question of substituting power machinery for hand labour in these industries. The first improvements displaced the old-fashioned spinning wheel. In 1764, or thereabouts, a poor weaver by the name of James Hargreaves devised the "spinning jenny," or multiple spinning wheel. About the same time other inventors hit upon the idea of spinning by means of rollers. Richard Arkwright, a barber, made a commercial success of this process with his "water frame," patented in

1769. In 1779 Samuel Crompton, another weaver, combined these new processes in his "spinning mule" and thereby gave to power spinning something of its present efficiency.

Weaving

Power weaving was perfected less rapidly. The Rev. Edmund Cartwright invented the first power loom in 1785, but it was not until after 1800 that it began to displace to any considerable extent the old weaving frame. About the same time that Cartwright made his invention, Henry Cort, an iron and steel manufacturer, devised the puddling process for transforming pig into malleable iron, and machinery for rolling the latter into bars of convenient size for further manufacture. By the end of the century the use of water and steam power in place of hand and foot power was beginning to make its way into every important branch of English manufacturing, and the latter term was coming to have its present meaning of "making by machinery."

Steam Transportation

The industrial revolution was not fully consummated until the same power which had transformed manufacturing processes was applied to transportation. Robert Fulton's invention of a successful steamboat in 1807 was the first step in this direction. It was not, however, until 1838 that the first steamship crossed the Atlantic, and it is only in our own day that ocean freights are beginning to be moved predominantly by the power of steam. The invention of the locomotive by Robert Stephenson in 1814 made possible the application of steam power to land transportation. The first English railroad was opened for traffic in 1825 and placed England more than a decade in advance of other European countries in her utilisation of this important aid to industrial development. Cheapened means of transportation contributed quite as much as cheapened processes of manufacture to the marvellous growth of England's industries during the last century. They enabled her to ship her goods to the most remote quarters of the world and to import in exchange the cotton, wheat, and other raw materials for whose production she was less well adapted than for manufacturing. Thus these applications of steam power multiplied many fold the advantages which England derived from her abundant supplies of coal and iron and helped to confirm her possession of the title of "mistress of the sea," which

she had acquired towards the close of the seventeenth century.

The *Laissez-faire* Policy

§ 9. One of the principal effects of the industrial revolution was a radical change in governmental policy in England. As one invention followed another industrial conditions were so modified that the old regulations ceased to be effectual. Specifications in regard to the qualities and the prices of goods were obviously inapplicable when methods and costs of production were changing so rapidly. Equally futile were rules in regard to periods of apprenticeship and rates of wages. Realisation of this fact came only gradually to members of Parliament, and it was several years after Adam Smith formulated the arguments against governmental regulation and interference that have now become classic before the policy of non-interference or *laissez-faire* was adopted. In his "Inquiry into the Nature and Causes of the Wealth of Nations," * published in 1776, Adam Smith describes this policy as follows: "All systems, either of preference or restraint . . . being taken away, the obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest in his own way, and to bring both his industry and capital into competition with those of any other man or order of men. . . According to the system of natural liberty, the sovereign has only three duties to attend to; . . . first, the duty of protecting the society from the violence and invasion of other independent societies; secondly, the duty of protecting, as far as possible, every member of the society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice; and, thirdly, the duty of erecting and maintaining certain public works and certain public institutions, which it can never be for the advantage of any individual or small number of individuals to erect and maintain; because the profit could never repay the expense to any individual or small number of individuals, though it may frequently do much more than repay it to a great society."

Abolition of Restrictions

The conversion of a majority of the members of Parliament to belief in the *laissez-faire* policy in reference to wages, ap-

*End of Chapter IX., Book IV.

prenticeship, and the other matters regulated by the Elizabethan Statute of Apprentices occurred during the closing years of the struggle against Napoleon. In 1811 a Select Committee of the House of Commons reported that "no interference of the legislature with the freedom of trade, or with the perfect liberty of every individual to dispose of his time and his labour in the way and on the terms which he may judge most conducive to his own interest, can take place without violating general principles of the first importance to the prosperity and happiness of the community." Acting upon this view in 1813, Parliament responded to a petition demanding the enforcement of the clause of the Statute of Apprentices which required justices of the peace to fix wages, by repealing that part of the law. Its attention was next directed to the apprenticeship clause of the Act, and in the following year, notwithstanding the opposition of many workingmen, it also was repealed. Other legal restrictions were removed in subsequent years (*e. g.*, the East India trade was made free in 1813; the restrictions on emigration were abolished in 1824; restrictive features of the poor law were amended in 1834) and the way was prepared for the repeal of the tariff restrictions on foreign trade finally effected in 1846. With that measure the last vestige of the policy of national regulation devised by the statesmanship of Elizabeth and her successors disappeared. It would be a mistake to conclude, however, that the *laissez-faire* policy was ever, even for a few years, in full operation in England. As old regulations were abolished, humanitarian considerations secured the enactment of new ones designed less to further the interests of business than to protect the weaker classes in the community, children and women, from overwork under insanitary conditions. These new regulations, factory and workshop laws, as they are called, have now assumed an importance which entitles them to separate consideration.*

Rise of Factory System

§ 10. The substitution of expensive power machinery for the simple tools and implements previously used in all branches of industry ushered in the present "factory system." The leading characteristics of this system are so familiar that it will be necessary merely to indicate the changes which it made in

* *Cf.* Chapter XXII.

the situation of the labouring population of England. Previous to the industrial revolution it was customary for artisans to own their tools and to carry on their work either in their own homes or in small adjacent shops. The master workman was assisted by a few journeymen and apprentices, but in most trades there was no wide gulf between him and them. All belonged to the same social class. The work done was more often to meet orders given in advance than to supply the general market, and consequently the risk of loss through misdirected production was small. In some trades, and notably in the textile industry, a class of middlemen had arisen who supplied the raw material to artisans and paid them at stipulated rates for turning it into finished products. This arrangement relieved artisans of the trouble of seeking their own raw material and of dealing directly with consumers, but it did not alter materially their relation to their work or to those who assisted them. Still another characteristic of the time was the practice of combining two or three occupations. The families of farm labourers usually had spinning wheels, and added to the family income in winter by making yarn. Weavers' families, on the other hand, usually had garden patches about their homes, and produced for themselves in summer much of the food which they required. In these ways the dependence of different families and of different localities upon single industries, which is so characteristic of the present organisation of industry, was lessened.

Effects of Factory System

The introduction of power machinery broke up these simple arrangements. To use such machinery economically it was necessary to employ dozens, even hundreds, of hands under the same roof. Moreover, the machinery and the factory building, in which it was installed, were too costly to be owned by the workers themselves. Their use brought forward a new class of "capitalist employers," who were widely separated from their employees, and were apt to look upon the latter very much as they looked upon the material instruments of production which they employed. Finally, the new machine processes of production called for different industrial qualities than those which had been at a premium when production was mostly by hand. The skill of the master craftsman was now matched

and even excelled by the quickness of the child who fed an automatic machine. As a consequence whole classes of the population, which were previously in comfortable circumstances, were deprived of their ability to earn even a bare subsistence, and other classes, for whose labour there had been little demand, found their position much improved. A further result of the introduction of power machinery was a change in the location of industrial centres. From an early period the eastern and southern counties of England had been the seats of the country's principal industries. But both water power and coal were lacking in these regions while found in abundance in the northern and western counties. The result was a great shifting of industries to the latter. This shifting of the centres of industry imposed terrible hardships upon the sections which were waning in industrial importance, from the consequences of which some of the counties of England have not even yet entirely recovered.

The cheapened processes of production which were so advantageous to the country as a whole, were, thus, the cause of much suffering to the working class. Their introduction served to widen the gulf between employers and employees, to make whole districts dependent for their prosperity upon the condition of single trades, and to encourage the employment of children and women, for whose labour there had been little demand outside of the home in the previous age. The problems which have arisen as a consequence of these changes still press for a solution, not only in England, but in all progressive countries, and give perhaps its chief interest to the study of economics.

Conclusion

§ 11. To sum up this brief sketch of the rise of modern industry in England: the course of development was from local self-sufficiency in industrial matters and local regulation to an industrial organisation of national scope, in which questions of money and trade were prominent, and national regulation was the rule. Only within the last one hundred years has the system of industrial freedom been adopted. The institutions and practices belonging to this last stage of development, now so familiar as to seem unchanging, are none of them very old—compared with the age of industrial society—and are all of them on trial, and likely, in the course of time, to be found

unfitted to new industrial conditions, and to be discarded as were the institutions of the manorial system and the regulations of the Elizabethan period. Free competition, which seems to the modern mind so essential to the continuance of prosperous industrial activity, was almost unknown in mediæval England. Private property, at least in agricultural land, hardly existed in its modern form. The granting of monopolies, which is so repugnant to the modern sense of justice, was almost as common in the days of Elizabeth as is the incorporation of joint-stock companies to-day. Present practices and institutions have been adopted because they suit the needs of the time; but as surely as conditions are changing and new needs are becoming dominant, practices and institutions must also change.

REFERENCES FOR COLLATERAL READING

**Ashley*, English Economic History, 2 vols.; **Cheyney*, Industrial and Social History of England, Chaps. I.–VIII.; *Gibbins*, Industry in England; **Price*, Short History of English Commerce and Industry; *Warner*, Landmarks in English Industrial History; *Rogers*, Six Centuries of Work and Wages, and The Industrial and Commercial History of England; *Cunningham*, Growth of English Industry and Commerce, 2 vols.

CHAPTER II

THE INDUSTRIAL EXPANSION OF THE UNITED STATES

Colonial Period

§ 12. The story of the settlement of different portions of North America by colonists from different lands, of the magnificent distances, and the differences in institutions and ideas which long held them apart, and of the common interests and the common cause, first against the French and Indians, and then against the English, which at last brought them together and cemented them into a nation under the Constitution of the United States, has been too often told to need repetition. From its very nature, as a new country with unbounded natural resources in virgin land and forests, the United States was predisposed to extractive industries. The earlier settlers established themselves along the coast as farmers and Indian traders. As the Indians were driven back into the wilderness, adventurous whites took up the business of hunting and trapping, and acted as pioneers in the westward movement characteristic of the development of the country during the last century.

During the seventeenth and eighteenth centuries, the American farmer made for himself most of the things that he required. His food was the produce of his farm or game from the neighbouring forest. For clothing he used the skins of animals and homespun cloth. His house was made of roughhewn logs. Only his gun and some of his tools and implements were purchased, and these were mostly imported from England. One important branch of manufacturing alone was developed during colonial times, that is, ship-building, which early established itself in New England, and continued to be a leading industry in that section until wooden vessels were superseded by those of iron.

Liberty, Private Property, and Equality

The industrial institutions and ideas which were fostered by colonial conditions may be easily surmised. Living in comparative isolation and enjoying almost complete industrial in-

dependence, the colonists came to regard *liberty* as one of their dearest possessions. To direct one's life and activities as one pleased came to be thought of as an inherent right with which no such extraneous thing as government should interfere. The abundance of free land and the importance to the first settlers of extending the cultivated area as rapidly as possible so that the menace of Indian massacre might be pressed farther and farther into the interior, made the system of *private property in land* seem natural if not inevitable. From an early period settlers were permitted in nearly all of the colonies to acquire on easy terms the absolute ownership of large estates. As long as equally promising land remained open to the border pioneer there seemed nothing inconsistent in this policy with the ideal of *equality*, which was fostered by the similarity of the conditions under which most families lived and supported themselves. This ideal showed itself in connection not only with social usages, but also with the political organisation of the country. Short terms and rotation in office, which are characteristic of American public life, have from the first been defended in the popular consciousness on the ground that any good American citizen is competent to serve his country in any capacity.

Experience with the thefts and depredations of the lawless characters that are always found in pioneer communities made the colonists peculiarly alive to the sacredness of property. It was taken for granted that property was justly acquired, and governmental machinery was largely devoted to protecting people in the use and enjoyment of their possessions. Thus, in the bills of rights which were generally appended to the constitutions adopted by the States after independence was achieved, life, liberty, and property are characterised as the three fundamental and inalienable rights of American citizens. In exalting the rights of property the colonists were not so much breaking with the institutions which they had brought with them from the Old World as giving greater prominence to familiar ideals. By so doing they paved the way for an industrial civilisation which has been marked thus far by intense individualism in thought and practice.

In conflict with the ideals of liberty and equality was the

Slave *vs.* Free Labour

demand arising from the abundance of fertile land for a large labouring population. To satisfy this need Negro slavery was early introduced into the southern colonies, where conditions of soil and climate made slave labour profitable. The northern colonies resorted to the system of importing white servants from Europe under contracts (indentures) which required the latter to work for a certain number of years in return for their passage money. Where slavery flourished labour itself soon came to be despised by the free inhabitants, so that slaves, who were at first merely a convenience in such sections, became with the progress of time an economic necessity. The system of indentured labour had no such serious consequences. At first, a valuable supplement to the wages system which was carried on side by side with it in the northern colonies, it was given up entirely early in the nineteenth century, when easier ways were found of securing from Europe the much-needed working force. The diverse social, political, and economic ideals which North and South owed to their contrasting labour systems were the root cause of the attempt of the Southern States to secede, and of the terrible Civil War through which the Union was saved and through which, incidentally, slavery was abolished. Since the issue of the Emancipation Proclamation in 1863 the wages system has been introduced in one form or another into all sections, until it has become the characteristic labour system of the whole country.

The National Industrial Ideal

§ 13. When the united colonies declared their independence of Great Britain and formed themselves into the United States, the industrial ideal of most of the revolutionists was an agricultural community. Appreciating the vast extent of the undeveloped resources of the country and the superior advantages of England for manufacturing, the founders of the Republic counted upon a mutually advantageous trade, consisting of the exportation of raw products and the importation of manufactured goods, as one of the conditions to national prosperity. England's own policy had much influence in giving a different direction to national ambition. Through her restrictive measures she made trade on equal terms between the two countries impossible. The result was that even before the Federal Constitution was adopted some of the states, such as Massachusetts

and Pennsylvania, had entered vigorously on the policy of developing home manufactures. Through the influence of the representatives of these states the first national tariff act, passed in 1789, contained distinct intimations that the building up of manufactures within the country was one of the objects aimed at. Alexander Hamilton's famous "Report on Manufactures," submitted to Congress in 1792, clearly presented and defended the ideal of national industrial independence, and when the United States was involved in 1806 in the European struggle, which had up to that time redounded to its advantage, was forced to ruin its own trade by the "Embargo Act," and, finally, in 1812, to take up arms against Great Britain in defence of its rights upon the high seas, this idea had gained many adherents. The tariff acts of 1816, 1824, and 1828 reflect clearly the new ambition to build up all desirable industries within the confines of the United States, and to reduce foreign trade from the position of the source of manufactured necessities to that of an outlet for surplus products. During the first three decades of the nineteenth century American cotton and woollen manufacturing was developed to a point where it compared not unfavourably with the same industries in Great Britain. The great inventions, which were described in the last chapter, were introduced, and in some cases improved upon, and the water-power furnished by the swift-flowing streams of New England and the Middle States was utilised. Iron and steel industries developed more slowly, owing to ignorance of the coal and iron resources of the country. During this period the Southern States, which could not, because of their "peculiar institution," hope to develop manufactures of their own, quite reasonably objected to paying the higher prices needed to protect Northern manufacturers. Out of deference to the more important slavery issue, a compromise was effected in 1832 which resulted in lower protective duties until just before the outbreak of the Civil War. The withdrawal of the South from representation in the Federal Government during that struggle, and the thinly veiled hostility of some of the countries of Europe to the side of the North, caused a great revival of the ideal of national industrial independence. Opinions differ as to whether the protective tariffs

and other measures that were adopted in the effort to realise this ideal have been beneficial to the country as a whole. That they have been potent influences in strengthening the bonds which united different sections, however, and in fostering a spirit of national as distinct from State patriotism, cannot be doubted.

Physical Characteristics of the United States

§ 14. The purchase of the Louisiana Territory from France in 1803 gave a new direction to national ambition. Henceforth, to extend their settlements until they stretched from sea to sea, became the definite purpose of the people of the United States. The story of the way in which that purpose has been fulfilled constitutes the most characteristic chapter in the country's history.

As rounded out by the annexation of Texas in 1845 and the subsequent purchases from Mexico, the United States contains nearly 3,000,000 square miles of territory, of which fully 2,500,000 square miles enjoy a summer climate suitable for agriculture. Geographically this region falls roughly into four great divisions. The original colonies were confined between the Atlantic Ocean and the Appalachian Mountains, which extend with but few interruptions all the way from Maine to Georgia. West of these mountains the valleys of the Mississippi River and of the Great Lakes begin, and extend in an unbroken plain, embracing more than one-half of the area of the whole country, to the foot of the Rocky Mountains. From the Rocky Mountain range to the Sierra Nevada range in California and the Cascade range in Oregon and Washington, is the third division of the country, an arid plateau broken by other mountain ranges and formerly designated as the Great American Desert. West of the Sierra Nevada and Cascade mountains, and extending to the Pacific Ocean, is the fourth geographical division. A brief account of the physical characteristics of these different sections will contribute to an understanding of the forces which have shaped the industrial expansion of the country.

The Atlantic Seaboard

The region between the Atlantic Ocean and the Appalachian Mountains is distinguished by excellent harbours and numerous rivers and streams suitable for navigation and for use as sources of water-power. The land of this section is

fairly good and, in consequence of the growth here of many of the largest manufacturing and commercial cities of the country, has been more highly cultivated than that of sections more distant from profitable markets.

The Middle West

The Mississippi Valley and the Valley of the Great Lakes form the great agricultural section of the United States. Besides being very level, in consequence of glacial action at an earlier period, this region has a rich soil and is well watered by the clouds which rise off the Gulf of Mexico and are deflected east by the Rocky Mountains. Its natural advantages for water transportation are even more remarkable. It is estimated that the Mississippi and its tributaries, the Ohio and the Missouri, are navigable for over 10,000 miles of their extent, while for nearly half that distance they are large enough to carry vessels of a considerable size. The Great Lakes offer even better facilities for transportation, although over a shorter course. As supplemented by the canals connecting Lake Superior with Lake Huron and Lake Erie with the Hudson River and with Lake Ontario, these great bodies of water make possible continuous navigation for a distance of more than 2000 miles. As outlets for the agricultural and mineral products of the Northwest their importance can hardly be overestimated.

The western border of the Mississippi basin suffers from the same scarcity of rainfall that has given its name to the Great American Desert, and should really be treated with that section in an economic classification. This arid region is nearly 1000 miles wide at the northern border of the United States, but narrows to 500 miles on the Mexican frontier. Its total area is quite one-third that of the whole country. The soil of this vast territory has been found to be exceedingly fertile in those places where artificial irrigation can be employed, but even the most liberal estimates make such sections but a fractional part of the whole region. So far as can be foreseen the greater portion of it must remain useful only for its mineral deposits and for cattle and sheep ranching.

The Far West

The country bordering on the Pacific Ocean has a character peculiar to itself. Its southern section enjoys a semi-tropical climate and is suited to the cultivation of oranges, lemons, figs,

and similar fruits. A lower mean temperature adapts the region farther to the north and extending all the way to Puget Sound, to the growth of wheat and other grains. Unfortunately this region is markedly deficient in harbours and navigable rivers, and for this reason, if for no other, is unlikely to attain as high a stage of industrial development as the Atlantic coast region.

The New Possessions

Detached from the compact area that has been described are the outlying territories more recently acquired by the United States by purchase, by annexation, and by conquest. Of these the principal are: Alaska (area, 531,000 square miles), Hawaii (6740 square miles), Puerto Rico (3600 square miles), and the Philippines (120,000 square miles). Alaska is valuable for its mineral deposits and its fisheries. The principal product of Hawaii is sugar, for which there is a ready and ample market in the United States. Puerto Rico also produces sugar in considerable quantities, but its chief crops are coffee and tobacco. Both islands are sufficiently near the United States to become Americanised, and are valuable as coaling stations for the nation's growing fleet of merchant vessels. The chief products of the Philippines are hemp, sugar, copra, and tobacco. The first two are much needed in the United States, and may become the basis for an extensive trade. In addition, the islands are said to be richly supplied with minerals of different kinds.

Development of Transportation Facilities

§ 15. The foreign complications in which the country began to be involved shortly after the acquisition of Louisiana checked somewhat its internal development during the first two decades of the century. The long period of peace which ensued was very favourable to the progress of settlement, and about 1820 the era of westward expansion began in good earnest. As already indicated, the first great obstacle to westward immigration was the Appalachian Mountains. Building roads over these mountains and through the dense forests which surrounded and covered them was a task of such seriousness that state aid had to be called in for its accomplishment. Even after roads were built, travel continued to be slow, difficult, and dangerous. The need of an easier route to the Middle West was keenly felt, and led to the projection of the Erie Canal to

connect the Hudson River at Albany with the eastern end of Lake Erie. The canal was completed and opened for traffic in 1825, and its superiority over the rough wagon roads as a means of conveying settlers and goods to and from the towns that were springing up about the Great Lakes and along the Ohio and Mississippi was immediately shown in the impetus which it gave to emigration from the Eastern States.

Growth of Railroads

While attention was being given to the building of better roads and of other canals in different sections of the country, the railroad and steam locomotive were introduced from England, the latter being used for the first time in 1829. This event marks a turning point in the history of internal improvements. In a few years there was in progress a veritable stampede for railroad construction at government expense. The States vied with each other to take the lead in this development, and bonds to secure the needed funds were issued so recklessly that by 1845 even so rich a commonwealth as Pennsylvania was brought to the verge of bankruptcy. The reaction which followed was as violent as had been the original mania. Canals and railroads were disposed of for a fraction of their cost and taxation was resorted to to make up the deficit. The net result of the policy of internal improvements at State expense was that the country secured the railroads indispensable to its development at an earlier period than would have been possible had conservative counsels ruled at this period. In comparison with the 229 miles of railroads built before 1832, there were in operation by 1840, 2818 miles; by 1850, 9021 miles, and by 1860, 30,626 miles. Without the railroads the marvellously rapid settlement of the Mississippi Valley could hardly have taken place.

Crossing the Continent

Before the outbreak of the Civil War plans had been matured for the construction of a transcontinental railway, and appeal had been made for Federal aid to carry out the project. The idea was revived as soon as the war closed, and with the aid of a Government loan and a substantial grant of land the Union and Central Pacific Railroads were finally connected. They were opened for through traffic in 1869, and served as a valuable aid to the settlement of the Far West. Other transcontinental lines were pushed over the Rocky Mountains at

other points, and at the close of the century there were six different railroads crossing the country from east to west, and able to convey passengers from New York to San Francisco in less time than had been required a hundred years earlier to go from New York to Washington. To aid in the building of these roads the Federal Government made land grants aggregating millions of acres and pledged its credit for millions of dollars, nor was their construction accomplished without wholesale corruption and misappropriation of funds. It must be conceded, however, that in this case, as in the case of the state-aided railroads, the ultimate benefit to the material development of the country far exceeded the loss to the public purse.

Increase in Traffic

Already, by 1861, the railway mileage of the United States was equal to that attained in 1900 by any single European state. In the latter year the total mileage for the United States was nearly 200,000 miles, as compared with only 176,000 miles for all European countries taken together. The increase in the business of the railroads in recent years has been even more remarkable than the increase in their mileage. In 1885 the number of passengers carried one mile by all of the roads of the country was in round numbers 9,000,000,000, and the number of tons of freight carried one mile, 49,000,000,000.* In 1895 the corresponding figures were 12,600,000,000 and 88,600,000,000, indicating an increase in the ten years of about 40 per cent. for passengers and 95 per cent. for freight. The increase from 1895 to 1901 was even more striking, the totals for the latter year being 17,000,000,000 passenger miles and 147,000,000,000 ton-miles, representing a gain in the six years of 35 per cent. in passenger and 66 per cent. in freight traffic. When it is considered that it is good average hauling over a country road, for a man and a team to move twenty tons one mile in a day, some conception may be formed from these figurres of the importance of the service which the railroads of the country render. No single fact so well illustrates the rapid industrial expansion of the United States as this remarkable development of its transportation facilities.

* These are the units usually employed to compare the businesses of different transportation systems. The first is called the "passenger mile," the second the "ton-mile."

§ 16. The following table shows the growth of population by decades from 1790 to 1900: Growth of Population

Year	Population	Increase, per cent.
1790	3,929,214	
1800	5,308,483	35.1
1810	7,239,881	36.4
1820	9,638,453	33.1
1830	12,866,020	33.5
1840	17,069,453	32.7
1850	23,191,876	35.9
1860	31,443,321	35.6
1870	38,558,371	22.6
1880	50,155,783	30.1
1890	62,622,250	24.9
1900	75,568,686	20.7

These figures do not include the residents of the Indian Territory, nor the populations of Alaska, Hawaii, Puerto Rico, and the Philippines. The additions to be made under these heads for 1900 make the population of the whole country about 85,000,000.

In comparison with the rates at which the populations of other countries have grown during the period covered, the growth of the United States has been astonishing. In fact, history furnishes no parallel on an equal scale to the increase from 1790 to 1860, when the total population doubled three times. The marked falling off in the percentage of increase since 1860 is indirect proof that the chief incentive to the rapid growth of the preceding years was the abundance of fertile and practically free land which was open to settlement. It is also reassuring to those who feared lest the country should be burdened with a superabundant population.

The Foreign and Native Born

From the beginning of its history the United States has each year attracted large accessions to its population from abroad. From 1820, when statistics of immigration first began to be kept, to 1903, over 21,000,000 immigrants came to the country. The largest number in a single year previous to 1903 was 789,000 in 1882. The number continued large, averaging about 500,000 each year, until 1893, when it was reduced by the industrial depression. The lowest number in recent years was

reached in 1898, when only 229,000 immigrants were reported. By 1902 the number had increased again to 649,000, and in 1903 it exceeded 850,000. No statistics of births and deaths for the country as a whole are collected, so it is impossible to compare directly the "natural increase," that is, the annual excess of births over deaths within the country, with the increase due to immigration. Some notion of the relative importance of these two sources of population is afforded, however, by the census comparisons of the native and foreign born. The enumeration for 1900 showed that of the total population, 65,800,000, or 86 per cent., were native born, and 10,500,000, or 14 per cent., foreign born. During the decade from 1890 to 1900 the native born increased 22 per cent., while the foreign born—owing to the marked falling off in immigration referred to—increased only 12 per cent. The census distinguishes also the native born of foreign parents. They aggregated in 1900, 11,500,000, or 21 per cent. of the population. The native born of foreign parentage and the foreign born taken together constituted in 1900 over one-third of the population of the country.

Another element in the population which is of great significance is the Negro. In 1900 8,840,000 persons, or 12 per cent. of the people in the country, were coloured. This element increased from 1890 to 1900 18 per cent., while the white population increased 21 per cent.

The Distribution of the Population

§ 17. When the first census was taken in 1790, only 5 per cent. of the population was found west of the Appalachian Mountains. In 1900 nearly 60 per cent. was so located. The progress of this westward expansion is indicated by the following statistics: From 1800 to 1850 the population of the North Atlantic States increased by 225 per cent., and that of the South Atlantic States by 105 per cent. In the same period the population of the North Central States increased from only 51,000 to 5,400,000, and that of the South Central from only 335,000 to 4,300,000. In the later years of this period the settlement of the Far West was just beginning through the migration of gold seekers to California. From 1850 to 1900 the population of these sections increased as follows: North Atlantic States, 144 per cent.; South Atlantic States, 123 per cent.; North Central States, 387 per cent.; South Central States, 227

per cent.; Western States, from only 179,000 to 4,100,000. The decennial rates of increase for these different sections since 1850 are significant:

Percentages of Increase of Population

	1850–1860	1860–1870	1870–1880	1880–1890	1890–1900
North Atlantic States,	23	16	18	20	21
South Atlantic States,	15	9	30	17	18
North Central States,	68	43	34	29	18
South Central States,	34	11	39	23	25
Western States,	246	60	78	71	33

These figures show a gradual equalisation in the rates of growth of different sections. It may fairly be concluded from them that the westward movement of population has about come to an end, and that but for peculiar local conditions the Eastern States are likely in future to grow as rapidly as the states west of the Mississippi.

The Negroes

The distribution of the Negro and foreign-born elements in the United States has given rise to special problems for the sections most affected. Not more than one-tenth of the Negro population has withdrawn from the states where slavery flourished before the Civil War. In 1900, six of these states—Mississippi, South Carolina, Louisiana, Georgia, Alabama, and Florida—Negroes constituted over 40 per cent. of the population. In all of them the race problem overshadows all others.

The Foreign Born

The immigrants who came to the United States settled for the most part in the North and West. In 1900 over 86 per cent. of the total number were living in the North Atlantic and North Central States, and only 8 per cent. in the Western States. The states in which the foreign-born constituted over 25 per cent. of the population in 1900 were: North Dakota, Rhode Island, Massachusetts, Minnesota, Montana, Connecticut, and New York. If to the foreign born found in these states be added the native born of foreign parentage, the foreign element is even more conspicuous. Thus, in 1900, persons, one or more of whose parents were foreign born, constituted in North Dakota, 77 per cent. of the population; in Minnesota, 75 per cent.; in Wisconsin, 71 per cent.; in Rhode Island, 64 per cent.; in Massachusetts, 62 per cent.; in New York, 59 per

cent., and in California, 55 per cent. It goes without saying that special measures are needed in these states to protect American ideals and American institutions from foreign influences.

Concentration of Population in Cities

Next to the westward movement, the concentration of population in cities was the most striking tendency of the last century. In 1800 only 4 per cent. of the people of the country lived in cities of 8000 inhabitants and upwards. This proportion had increased to 12 per cent. in 1850. Since then the growth of cities has been so rapid that they contained in 1900 one-third of the total population of the country. A complicating aspect of this growth of cities has been the large foreign element which most of them contain. According to the census of 1900 the 161 principal cities of the country, which contained 26 per cent. of the total population, included 49 per cent. of the foreign born. In 86 of these cities the foreign born constituted more than one-fifth of the total population, in 24 of them more than one-third, and in 9 more than two-fifths. This large foreign element in American municipalities has added its share to the economic and political difficulties with which these rapidly growing centres of population have had to contend.

Agricultural Development of the United States

§ 18. Agriculture remains to-day, as it was in the colonial period, the dominant industry of the United States. This has been the natural result of the extensive area of fertile land with which the country is endowed, and its still relatively sparse population. Of its principal agricultural products, three, corn, white potatoes, and tobacco, were indigenous to the New World. The first, because of the ease with which it may be grown on new land, has contributed more than any other plant to the material development of the country. In colonial days, corn, hay, wheat, and potatoes were leading crops in the North; corn, tobacco, rice, and indigo in the South. With the invention of the cotton gin, a machine for separating the cotton seed from the cotton fibre devised by Eli Whitney in 1794, and of spinning machinery capable of treating the short-fibred variety of cotton which alone flourished on the mainland, that product began to be, as it has ever since remained, "king" in the Southern States; but corn, hay,

wheat, and potatoes continued to be the staples of the North. As cities arose truck and dairy farming to supply their needs became profitable. Meantime the pressing back of the Indians encouraged the keeping of stock, since this is practicable only in localities where property can be protected. Agricultural methods, both North and South, prior to the Civil War, were exhausting to the soil, and the wearing out of old lands was a strong incentive urging settlers to bring the superior soils of the Mississippi Valley under cultivation.

Invention of Improved Implements

The cheapness of land and the dearness of labour have been conditions favourable to the invention and use of labour-saving tools and machines. American farmers were from the first progressive. They were forced to devise methods better adapted to the conditions of a new country than those they brought with them from Europe. The invention of agricultural machinery was especially stimulated during the Civil War, when the labour supply became even less adequate than before to the needs of the country. In this period many of the inventions were patented which have made American agriculture so different from that of the Old World. The tendency of these improvements has been to increase the productiveness of American farming not so much for each acre cultivated as for each man engaged in cultivation. Only recently has attention begun to be given on any large scale to the problem of getting as much as possible out of each acre of land, because only recently has lack of land been felt as a serious hardship by the ambitious American farmer.

Recent Changes

Since the close of the Civil War wheat cultivation has had a great development in the Northwest; the "corn belt" has been extended west of the Mississippi to the very borders of the arid region, and in that region itself cattle, horse, and sheep grazing have become important industries. The extension of the "cotton belt" to include eastern Texas, and the rapid growth of the fruit industry in Florida and California are other changes of comparatively recent date. Meantime agriculture in the more settled portions of the country has become diversified and rotations of crops, calculated to preserve the fertile properties of the soil, have been introduced. The raising of small fruits and the keeping of cows, whose milk is sold in the city market,

or converted into butter and cheese, are now chief interests to Eastern farmers. The present distribution of agricultural products in the United States is roughly indicated by the accompanying map.

Principal Agricultural Products of the United States

§ 19. Among all of the products of the country corn still holds first place. Its relative importance in comparison with other agricultural staples is shown by the following table, based on statistics published by the United States Department of Agriculture:

	Average Annual Crop 1896–1900	Average Annual Price of Total Crop 1896–1900
Corn,	2,058,850,000 bu.	$585,000,000
Hay,	58,600,000 tons	409,000,000
Wheat,	540,500,000 bu.	355,000,000
Cotton,	9,940,000 bales	313,000,000
Oats,	748,460,000 bu.	174,700,000
Potatoes,	209,650,000 bu.	84,300,000

Corn

As the map indicates, the principal corn-producing states constitute a compact area, the "corn belt." In 1896 seven of these states—Iowa, Nebraska, Illinois, Kansas, Missouri, Indiana, and Ohio—produced more than two-thirds of the country's crop. Since that year the agriculture of these states has become more diversified, and corn-growing has progressed in other sections, but they still produce more than one-half of the total crop, and depend in large measure upon it for their prosperity.

Hay

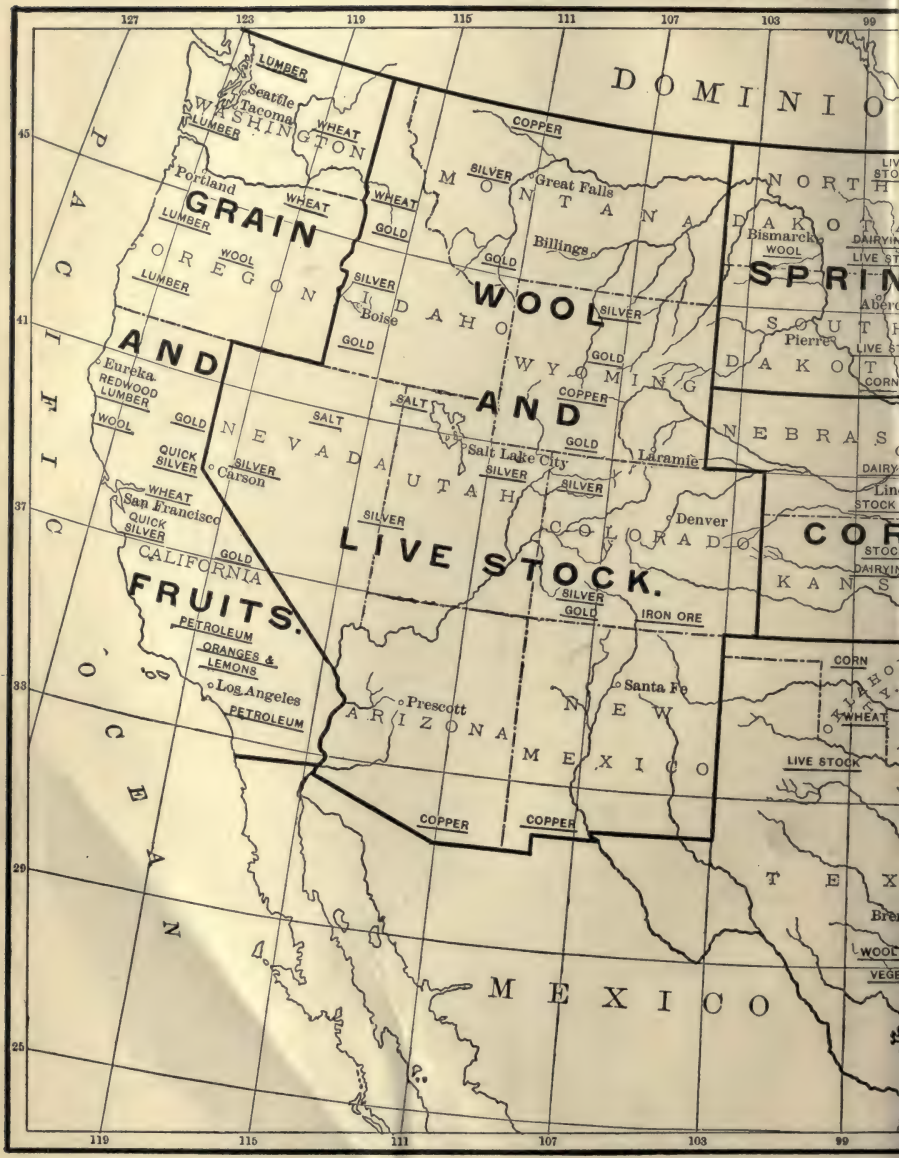
Hay, the second crop in importance, is produced in every part of the United States, and cannot be said to be localised in any particular region. The same is true of potatoes, and, in less degree, of oats.

Wheat

The production of wheat is also widespread, but the states of the Northwest, Minnesota and the Dakotas, are so dependent on this crop that they are usually described as the "wheat belt." The average annual crops of the years 1896 to 1900 indicate the following order for the leading wheat-producing States of the country: Minnesota (61,000,000 bu.), Kansas (53,000,000 bu.), North Dakota (36,000,000 bu.), California (30,000,000 bu.), Ohio (30,000,000 bu.), South Dakota (30,-

MAP OF THE

Showing approximately the Productive Areas



Reprinted from the Report

NITED STATES

rincipal Agricultural and other Staples, 1901.



U. S. Bureau of Statistics.

000,000 bu.). Together these six states produced in these years nearly one-half of the country's crop.

Cotton is more rigidly confined to a particular region than any other important agricultural product. Practically the entire crop of the country is raised in the seven states, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas, and Texas. In all of them it is the important money crop of most localities, and prosperity ebbs and flows according to the size of the crop and the price. The average annual production in bales of 500 pounds of these states from 1895 to 1899 was as follows: Texas, 2,500,000; Georgia, 1,400,000; Mississippi, 1,200,000; Alabama, 960,000; South Carolina, 920,000; Arkansas, 730,000, and Louisiana, 660,000. A comparison of the cotton crops of recent years indicates that the centre of production moved westward down to about 1900, when there was for the first time a smaller increase in the Texan crop than in the crops of the other cotton states. Cotton

Although the aggregate amounts of the three great staples, corn, wheat, and cotton, produced in the United States, have shown no tendency to diminish, they have not increased in recent years as rapidly as have the products of minor branches of agriculture; nor has agriculture as a whole developed at the same rate as mining, manufacturing, and transportation. If the present trend of development continues, it will not be long before agriculture has surrendered its place as the country's dominant industry in favour of manufacturing.

§ 20. During the seventeenth century iron mining developed in a small way in New Jersey and at other points where beds of ore were discovered. The cheapness of charcoal enabled the Colonies to produce iron, not only for themselves, but for export, until the cheaper process of smelting by means of bituminous coal was invented. The Champlain ore district was discovered in 1801, and within a few years developed into the chief seat of the iron industry. Notwithstanding the protective duty, charcoal iron competed at an increasing disadvantage with the imported bituminous product and the industry languished until 1839, when the problem of smelting ore by means of the anthracite coal that had been discovered in Pennsylvania was successfully solved. From this time on progress Development of Mining Industries

in the iron industry was rapid. In 1844 T-shaped rails were first rolled in the United States, and in the same year iron ore was discovered on the shores of Lake Superior. In 1855 the output of anthracite pig iron exceeded for the first time that made from charcoal. The same year saw the invention in England of the Bessemer process, introduced nine years later in the United States, and the beginning of that wonderful development which was to transform the iron age into the age of steel. The exploitation of the iron mines on Lake Superior proceeded slowly until after the close of the Civil War. It was not until 1869 that the output of bituminous coal and coke iron exceeded that made with charcoal, and not until 1875 that it exceeded that made with anthracite coal, or that the seat of the iron industry was definitely transferred from eastern to western Pennsylvania. Progress in the iron and related industries was very rapid after 1880, as is shown by the following statistics of iron, steel, and coal production:

Quantities of Iron, Seeel, and Coal Produced in the United States from 1880 to 1900

(*In tons of 2240 pounds*)

	Pig Iron	Steel	Anthracite Coal	Bituminous Coal
1880,	3,800,000	1,200,000	28,600,000	38,200,000
1890,	9,200,000	4,300,000	41,500,000	99,400,000
1900,	13,800,000	10,200,000	51,300,000	189,700,000

Iron and Coal

In 1890 the United States surpassed Great Britain for the first time as a producer of pig iron, as she had as a producer of iron ore twelve years earlier. In 1899 the United States became also the leading coal-producing country of the world. According to a reliable estimate the United States produced in 1900 34 per cent. of the world's output of pig iron and 37 per cent. of its output of steel.

Practically the entire output of anthracite coal is mined in northeastern Pennsylvania. That state also leads in the production of bituminous coal, being credited in 1900 with 71,000,000 tons, or nearly one-half of the total output for the country, in comparison with 23,000,000 tons for Illinois, 20,000,000 tons for West Virginia, and 17,000,000 tons for Ohio. Nearly five-sixths of the bituminous coal produced in the country is mined east of the Mississippi.

The chief source of iron ore continues to be the iron ranges adjacent to Lake Superior in Michigan, Wisconsin, and Minnesota. Together these states produced in 1900 19,000,000 tons, or more than two-thirds of the country's total output. Other large producers were Alabama, Pennsylvania, and West Virginia. More than five-sixths of the iron ore supply of the country is drawn from states east of the Mississippi.

Gold

Next in importance to coal and iron among the mineral products of the United States are the metals, copper, gold, silver, lead, and zinc, and the commodities allied to coal, petroleum and natural gas. The country's output of gold was insignificant until that metal was discovered in California in 1848. According to the statistics given by the United States Mint, the production of 1853 exceeded 3,000,000 fine ounces. It did not again attain that amount until 1898, when Colorado, with an output of over 1,000,000 ounces, had become the leading centre of production, and California, Alaska, South Dakota, Montana, Arizona, and Utah were each contributing from 100,000 to 750,000 ounces annually to the country's total.

Silver

The silver resources of the United States did not begin to be uncovered before 1860, when some rich deposits were discovered in Colorado. The maximum output was attained in 1892, when 63,000,000 fine ounces were produced. Since that year there has been some decline in the industry in consequence of the great fall in the gold price of the metal. The leading silver-producing states in 1900 were Colorado, which produced more than one-third of the total output, Montana, which contributed about one-fourth, Utah, which contributed more than one-seventh, and Idaho, which contributed about one-ninth.

Copper

The development of the copper industry of the country has proceeded slowly, although that metal now stands next to iron among America's mineral products. The copper mines on Lake Superior in Michigan, formerly worked by the Indians, began production in a small way in 1854. For nearly a generation these mines were the principal sources of supply, and it was deemed necessary to protect the infant industry with a duty on imported copper. In the early eighties the copper resources of Montana were discovered, and by 1890 that state had taken the lead as a copper producer. Next to Montana

and Michigan in copper production stand Arizona, Colorado, and California. The progress of copper production has been continuous since the close of the Civil War. The output in 1870 was estimated at 12,600 tons. By 1880 it had increased to 27,000 tons; by 1890 to 116,000 tons, and by 1900 to 271,000 tons. The United States now produces more copper than all the rest of the world put together.

Petroleum

The production of petroleum dates from about 1860. It was first discovered in western Pennsylvania, and wells have since been bored in Ohio, Indiana, New York, West Virginia, Colorado, California, Texas, and other states. In 1877 the total output of the country amounted to 560,000,000 gallons. Progress since that year has been steady, and in 1900 the total output amounted to 2,660,000,000 gallons, of which 44 per cent. was exported.

The production of natural gas was begun in 1872, also in western Pennsylvania. Pennsylvania, Ohio, and New York are still the principal sources of supply. The value of the natural gas output increased from $13,000,000 in 1895 to $23,600,000 in 1900, but there are indications that the industry must be short-lived.

Mineral Products, 1900

The following table indicates the relative importance of the leading mineral products of the United States in 1900:

Quantities and Values of Mineral Products of the United States in 1900

	Quantity	Value
Coal: Bituminous (short tons),	212,500,000	$221,000,000
Anthracite (long tons),	51,000,000	85,750,000
Pig Iron (long tons),	13,800,000	260,000,000
Copper (pounds),	606,000,000	98,000,000
Gold (troy ounces),	3,800,000	79,000,000
Petroleum (barrels),	63,000,000	75,750,000
Silver (troy ounces),	74,500,000	35,750,000
Natural Gas,		23,600,000
Lead (short tons)	271,000	23,500,000
Zinc (short tons),	124,000	10,600,000

In that year the United States led all countries in the production of coal, iron, copper, gold, silver, and lead. Its primacy in the production of the precious metals is closely contested, as

regards gold by British South Africa and Australia, and as regards silver by Mexico. In all the other products, however, its ascendency promises to increase rather than to diminish with the progress of time. Its greater area should enable it to produce more of some of these minerals than other countries, but its ability to produce more of all of them is a striking evidence of the wealth of its natural resources.

Development of Manufacturing Industries

§ 21. The development of manufacturing in the United States has been part of a general movement in which all progressive countries have shared, consisting in the introduction of machinery to perform tasks that could not be performed at all or not nearly so cheaply by hand labour. The resulting "industrial revolution" began to be felt in America during the first decade of the nineteenth century, and has since spread until it has affected industrial methods in the New even more than in the Old World.

The mechanical inventions of the nineteenth century, some of which have already been described, completed the industrial revolution begun in the eighteenth, by causing machinery to take the place of hand labour in nearly every branch of industry. Most important were inventions connected with the generation and utilisation of electrical power. The telegraph, the telephone, the dynamo, the electric light, and the electric car are a few of the inventions which promise to make the twentieth century the age of electricity as the nineteenth was the age of steam. Up to the present time the generation of electricity has required steam or water power. It has been, therefore, a secondary rather than a primary motor, and important because of the ease with which it can be transmitted great distances and applied in just the amount needed for each operation. By means of electricity sources of power, such as the Falls of Niagara, which were too great to be applied directly to the rotation of machinery, have been turned to a variety of uses. The power of Niagara now not only propels the machinery of numerous manufacturing establishments, but furnishes electric lights and force to run electric cars to towns within a radius of twenty miles. In the West water power is now used to generate electricity to aid in mining operations at distances of sixty-five miles and upwards.

The manufacturing progress of the United States is roughly indicated by the figures in the following table, based on the census returns:

Statistics of Manufactures in the United States, 1850 to 1900.

	Number of Establishments Reporting	Total Capital	Total (Average) Wage-earners	Value of Products
1850,	123,025	$ 533,000,000	957,000	$1,019,000,000
1860,	140,433	1,010,000,000	1,311,000	1,886,000,000
1870,	252,148	2,118,000,000	2,054,000	4,232,000,000
1880,	253,852	2,790,000,000	2,733,000	5,370,000,000
1890,	355,405	6,525,000,000	4,252,000	9,372,000,000
1900,	512,276	9,831,000,000	5,315,000	13,010,000,000

A striking fact revealed by these statistics is that while the number of establishments and of wage-earners increased five-fold or less during the period, the value of products increased thirteen-fold, and the amount of capital nineteen-fold. This affords indirect support to the statement that the country's progress in manufacturing has been for the most part progress in machine production. A more accurate notion of the growth of manufactures is to be obtained by studying the facts in reference to particular branches of industry.

Manufactures of Iron and Steel

The principal change that has taken place in the iron and steel industry is a substitution on a large scale of steel for iron products. Thus in 1880 less than one-third of the 3,800,000 tons of pig iron produced in the United States was converted into steel; in 1900 about four-fifths of the 13,790,000 tons produced was so converted. As late as 1878 more iron than steel rails were produced in the country; at present iron rails have practically gone out of use, as but a few thousand tons continue to be rolled each year in comparison with two to three million tons of rails of steel. Another change is in the process by which steel is made. Improvements in the open-hearth process invented by Siemens in 1867 have caused it to gain in favour in comparison with the Bessemer process. The following table illustrates this development:

Statistics of Crude Steel Produced in the United States
(*long tons*)

	Bessemer Steel	Open-hearth Steel	All Other	Total
1890,	3,690,000	513,000	75,000	4,278,000
1895,	4,910,000	1,137,000	69,000	6,116,000
1900,	6,680,000	3,398,000	105,000	10,183,000

The larger production of open-hearth steel is significant because it indicates a utilisation of ores which could not be economically treated by the Bessemer process.

Comparing the growth of iron and steel manufacturing in the United States with its growth in other countries, it appears that Germany alone has experienced a similar development. The latter country now contests with Great Britain for the position of second largest iron-producing country in the world. In 1902 the United States produced more iron and steel than both of these countries together, while either one of them produced four times as much as any other single country.

Manufactures of Cotton

The progress of the United States in iron and steel manufacturing has contributed greatly to its progress in other lines by cheapening machinery, but in no other has so favourable a showing been made. More typical of the general manufacturing development of the country is the growth of the cotton industry, a department in which the United States is still inferior to Great Britain. The average annual consumption of cotton in the United States in the six years 1873-1878 was 1,180,000 bales, as compared with an average world consumption of 5,490,000. In the years from 1891 to 1896 the average annual consumption in the United States had increased to 2,570,000 bales, but the world consumption in the same period had increased to 10,500,000 bales. The gain in the consumption by the United States was thus from 21 to 24 per cent. of the total. In the year 1900 the United States consumed 29 per cent. of the world's total. The same story is told by a reference to the number of spindles in American mills at different periods. The census for 1860 gave the total at 5,000,000. By 1880 the number had doubled. In 1890 it was returned as 14,000,000 and in 1900 as 19,000,000. In interpreting these figures it must not be forgotten that there is a high protective tariff on cotton goods which prevents the

foreign manufacturer from competing on equal terms in the American market.

Concentration in Manufacturing

It would require too much space to describe in detail the growth of other branches of manufacturing. In every line in which machinery can be largely used the United States has made notable progress, with the general result that the country now depends less upon Europe than at any previous period for the manufactured goods that she requires and that her own manufactured products are coming to take a very important place among her exports. With the increased use of machinery in manufacturing has come a tendency towards concentration of management and resulting enlargement of the size of the business unit. The latest phase of this development is the so-called "trust." Competing firms have been combined into great corporations, which in some cases have gained a virtual monopoly, at least for a time, of the branches of manufacturing with which they are concerned. The problems which have arisen in connection with this movement are discussed in Chapter XXV.

The Development of Foreign Trade

§ 22. The growth of the foreign trade of the United States has been less striking than the development of home industries, partly because of the protective tariff which has restricted the importation of protected articles. The following table brings out the main facts in reference to the country's foreign trade since 1855:

Foreign Commerce of the United States, 1855 to 1900

	Imports	Exports	Total	Percentage Increase or Decrease*
1855,	$258,000,000	$219,000,000	$477,000,000	
1860,	354,000,000	334,000,000	688,000,000	+46
1865,	239,000,000	166,000,000	405,000,000	−70
1870,	436,000,000	393,000,000	829,000,000	+105
1875,	533,000,000	513,000,000	1,046,000,000	+26
1880,	668,000,000	836,000,000	1,504,000,000	+44
1885,	578,000,000	742,000,000	1,320,000,000	−12
1890,	789,000,000	858,000,000	1,647,000,000	+25
1895,	732,000,000	808,000,000	1,540,000,000	−6
1900,	850,000,000	1,394,000,000	2,244,000,000	+46

Down to 1874 the value of imports regularly exceeded the

* + increase, − decrease.

value of exports, chiefly because during that period foreign capital in the form of machinery, etc., was being imported, with which to develop the internal resources of the country. The excess of exports which has characterised the trade in every year except three since 1874 indicates an increasing reliance on home capital and the partial repayment of the foreign capital invested here during the earlier period. The table reveals also the violent fluctuations to which foreign trade is subject.

Changes in Exports

During the last twenty years the character of the country's export trade has changed somewhat, as is shown by the following table:

Percentages of Total Exports of Different Kinds of Products, 1880 to 1900

	Agriculture	Mining	Forest	Manufactures
1880,	83	1	2	12
1890,	74	3	3	18
1900,	61	3	4	32

The growth of export trade in manufactured products indicated justifies the belief that the United States is passing the period when her manufacturing industries as a whole require protection. That they are still protected by high tariff duties, however, must not be lost sight of in interpreting the facts shown, or the other fact, of which much has been made in recent discussions, that exports now exceed imports of manufactured products. This would certainly not be the case if the protective tariff were repealed.

In comparison with European countries, and notably with Great Britain, the foreign trade of the United States is small in proportion to her population and wealth. The reason for this is that the United States is itself adapted to the production of such a variety of products that different sections secure by means of internal trade most of the things which they require. No European country could afford to dispense with foreign products, since to do so would entail suffering upon whole classes of the population who would thereby be deprived of the very necessaries of life. It would entail hardship on the people of the United States also if foreign trade were inter-

rupted, but the articles that would be missed would not be absolute necessaries, but comforts such as coffee, sugar, tea, and tropical fruits. The United States is more nearly industrially independent than any other important country in the world unless it be China, whose independence is due more to the low standards of living of her people than to the abundance of her natural resources.

Summary

§ 23. In the preceding sections the principal facts in regard to the industrial expansion of the United States have been passed in review. The circumstances which favoured the establishment of the fundamental legal institutions, freedom of contract and private property, were discussed, and their inconsistency with the other institution, slavery, which was swept away by the Civil War, alluded to. There followed a description of the physical characteristics of the North American Continent and a sketch of the progress of the principal branches of industry, transportation, agriculture, mining, manufacturing, and foreign trade, with incidental reference to the standing of the United States among the nations of the world in these different branches of production.

Conclusion

The point most deserving of emphasis in this account is the debt which the country has owed at every stage of its progress to its natural resources. These have played an important part in developing in the typical American the restless energy, enterprise, and mechanical ingenuity by which he is distinguished. At the same time they have offered an almost boundless field for the exercise of these qualities and have so richly rewarded effort that the standard of comfort and general well-being in the United States has been higher than in any other country of the world at all comparable with it in area. If the United States stood first among the nations of the world in the year 1900 in the production of corn, wheat, cotton, coal, iron, silver, gold, copper, and lead, it was owing chiefly to the country's natural endowment of broad and fertile acres, favourable climate, and rich mineral resources. Until the present day successive generations of Americans have been able to reap large profits from the exploitation of these natural resources. The same process will continue for many years longer, but already there are indications that the richest treasures of nature in

virgin land, primæval forests, and mineral deposits, have been taken and that the people must accustom themselves to a slower rate of progress and a less generous response to their labour.

REFERENCES FOR COLLATERAL READING

Lodge, A Short History of English Colonies in America; *McMaster*, History of the People of the United States, Volumes I. and II.; **Wilson*, Division and Reunion; *Rand*, Economic History since 1763; **Turner*, The Significance of the Frontier in American History: *Taussig*, Tariff History of the United States; **Shaler*, The United States of America, 2 vols.; **Whitney*, The United States; *Wright*, The Industrial Evolution of the United States; *Tarr*, Economic Geology of the United States; Statistical Abstracts of the United States; Abstract of the Twelfth Census, 1900.

CHAPTER III

PRELIMINARY SURVEY OF THE FIELD OF ECONOMICS

The Motives to Business Activity

§ 24. In the definition "economics is the social science of business" the last word is used in its broadest sense. It denotes activity entered into, not primarily for its own sake, but for the sake of some indirect return. Business is thus, in a sense, "work" as distinguished from "play," but must not be thought of as necessarily disagreeable. It includes *activity*, that is, pleasurable mental or physical exercise, as well as *effort*, that is, exercise which involves some element of discomfort or pain. The rational man tries to arrange his work so that it will involve as little effort as possible.

The motives to business activity are too familiar to require analysis. Men are so constituted that their happiness, their existence even, depends upon their having command over certain material commodities and personal services. They must have food, shelter, and clothing in order to live. Such things satisfy their primary, physical wants. Next come the more complex wants which civilisation has implanted in the human breast. Men desire tools, machines, conveniences for travel and social intercourse, and the countless other things which contribute to the comfort of modern life. The object of business activity is to create or obtain these material and immaterial conditions to well-being. Primitive men went about the task directly. They killed game for food, erected their own huts, and made their own garments from the skins of animals. Their civilised brothers have learned that business activity is more fruitful when it proceeds by roundabout and co-operative methods. They spend much of their time in fashioning tools, machines, and other aids to production, and concentrate their attention on special tasks, relying on others to provide most of the things which they require. It is this indirectness of

modern business activity which gives rise to many of the most important problems of economics.

Characteristics of the Economic Man

§ 25. In the broad sense in which the term "business" is used in the definition of economics, it is evident that business men and women are nearly as numerous in each community as the adult inhabitants. Even those who live entirely on incomes from property must be included, since their property plays a rôle in business even when they themselves do not. Excluded are children and old persons dependent upon others for support and the so-called "dependent" classes, whose maintenance is a charge on the whole community. Among the latter are included not merely the insane, the blind, the deaf, criminals, paupers, etc., who are maintained in asylums and prisons, but also beggars, swindlers, and thieves who are still at large, but who support themselves not by useful work, but by preying upon the sympathy or the property of others. In confining his study to the business classes, the economist does not, of course, ignore the existence of these dependents. He simply leaves the special investigation of the problems to which their presence in society gives rise to his co-worker, the sociologist.

A first step in the study of business is a clear analysis of the character and motives of the business man. Economists have been accused of setting up a purely imaginary business or "economic" man, and constructing a science to explain what business relations would prevail if all men were like the creature of their imaginations. To avoid this criticism we will begin with a characterisation of the typical business man to be found to-day in the United States and other countries in the same stage of industrial development. He has four traits which show themselves more or less clearly in all of his acts:

Self-interest

(1) The business man pursues his own interest in his business dealings and assumes that others will do the same. This does not mean that he is steeped in selfishness, but simply that from his point of view "business is business," not play nor philanthropy, and that he prefers to keep his getting separate and distinct from his giving.

The Larger Self

(2) In judging of his own interest the business man thinks of himself not as an isolated individual, but as a member of different social groups, of which the family is by far the most

important. He works not for himself alone, but for his family, his union, his club, and, in times of emergency, his country. In different relations and at different times he identifies his interest with the interests of these organisations. For his family the economic man will sacrifice as much or more than he will for himself alone.

Love of Independence

(3) He desires to be financially independent. His ambition is to stand on his own feet, to make his own way, and, when he accepts assistance, to give an adequate return for it.

Business Ethics

(4) He is controlled in his business dealings by the code of business morality that pertains to his class. As there is honour even among thieves, so there are special standards that are accepted and lived up to by different business classes. These are not usually as high as the standards professed in churches, but they are much higher than current criticisms of business morality would lead one to think. To be maintained, however, in communities where class barriers are constantly giving way, such standards have often to be reinforced by legal enactments.

These four characteristics of the economic man are readily explained by a reference to the evolutionary process which has brought industrial society to its present stage of development. Self-interest as a dominant motive, for example, is the direct fruit of that struggle for existence which is still in progress and which makes self-preservation the first law of nature to every organic species. In the case of men, religious and other influences have tempered self-seeking with consideration for others, but since those who succeed best in rising above their natural selfishness, as did, for example, some of the monks and nuns of the Middle Ages, tend to dedicate their lives to the service of other people and other people's children, rather than to rearing children of their own and transmitting to them their moral excellencies, they count for relatively little in the stern evolutionary process that goes on through the ages.

Utility

§ 26. The material commodities and personal services which satisfy human wants are conveniently designated as *goods*, while the capacity or quality in goods which satisfies wants is called *utility*. As used in economics these terms are stripped of the moral implication that attaches to them in ordinary

speech. Thus anything that satisfies a want has utility and is a good, whether it be the whiskey of the trader or the hymn-book of the missionary.

Free Goods

Not all goods figure in business transactions. Such things as sunlight, air, and water are usually *free goods* for which no one expects or receives a return. They are supplied by nature in such abundance that there is enough of them for all and to spare. In general it may be said that *whenever the spontaneous supply of any good exceeds the desire for it, units of that good will be free.*

Economic Goods

In contrast with free goods is that vastly larger class of commodities whose supplies are limited in comparison with the desire for them and which are therefore objects of economy. These are appropriately named *economic goods* and taken together constitute the *wealth* to secure which men engage in business. The characteristic of economic goods is that they have *value* as well as utility.

Value

The term, value, is used in two distinct although closely related senses in economics, and this has given rise to a great deal of confusion. It may designate *the importance which a person ascribes to a unit of a good as a condition to the satisfaction of his wants.* This is value in the subjective sense and may be distinguished as *value in use.* In the phrases, "the value of a loaf of bread to a starving man is beyond calculation" and "no one knows the value of an object until he has to do without it," values in use are meant. The other sense of the term is that of *value in exchange.* When a bushel of wheat is said to be twice as valuable as a bushel of corn, it is the exchange ratio between the two that is referred to. Value in exchange is thus *the power of a good to command other goods in exchange for itself.* In future in this work the word value by itself will be used in the sense of value in exchange.

Relation between Utility and Value

The three conceptions, utility, value in use, and value in exchange, are analysed more fully in the chapter on Value and Price. At this point it will suffice to suggest very briefly the relation which they bear to each other. Free goods have no value in use, that is, single units of such goods have no importance as conditions to the satisfaction of wants. Thus a cubic foot of air in the room in which the reader sits has no value,

although it has utility, because it would not be missed if withdrawn. Other air would rush in from adjoining rooms and from outdoors and the equilibrium of atmospheric pressure would be almost immediately re-established. If the room were made air-tight, however, and one cubic foot of air after another were withdrawn, the situation would be quite changed. Now, instead of being indifferent, each cubic foot of air would be of importance; and as one cubic foot after another was withdrawn this importance would steadily increase. As the air became thinner, discomfort, strangulation, and finally death would ensue, unless the process of exhaustion could be checked. The reader would in this case ascribe high value to air, holding it as precious when at the last extremity as life itself. As this illustration indicates, value in use is variable and measures the extent of man's dependence under the given conditions of supply upon a unit of the good being valued.

Value in Use and Value in Exchange

The relation between value in use and value in exchange is somewhat more complex. At the outset it is obvious that a good must have value in use to someone as a condition to its having value in exchange. Such value in use may be immediate as in the case of goods finished and ready for consumption, or remote as in the case of raw materials. Unless it is present there can be no value in exchange for the simple reason that no one will give anything for something which no one considers of any importance. In the second place a good which has value in use to two or more persons so situated that they may have business dealings with each other will normally have value in exchange. This may be inferred from the definition of value in use, since a good which is of importance to the well-being of two or more persons can hardly fail to be worth something in other goods. Since value in exchange never arises in the absence of value in use, and, on the other hand, normally results when value in use is present, there must be a close causal connection between the two. The explanation of this connection must be deferred to Chapter V.

Price

Closely related to value in exchange is another familiar concept, that of *price*. As ordinarily used in business conversation *price designates exchange value measured in terms of money*, money being the universal medium of exchange. In

the United States prices are expressed in dollars and cents, and the dollar is maintained, by means of regulations described in Chapter XVII., as the invariable exchange equivalent of 23.22 grains of pure gold. It follows that current American prices indicate the quantities of the commodity *gold*, for which units of the commodities priced would exchange on the given date in the given market.

§ 27. The limitation on the supply of goods which makes them economic or valuable may be due to the fact that they are unique, that they are controlled by a monopoly, or simply that business activity is required to bring them into existence. Examples of absolute limitation are afforded by old coins or stamps, pictures by deceased artists, etc. Such goods often acquire with age a value out of all proportion to the esteem in which they were originally held. Monopolised goods are equally familiar. Such are patented goods and those produced by means of secret processes. Most common of all are goods whose supplies are limited simply because business activity is needed to create them.

Production and Consumption

The creation of economic goods, or, more accurately, of the utilities embodied in them, is called production. It is the chief purpose of business activity. Contrasted with it is *consumption, the destruction of utilities incidental to the satisfaction of wants.* The latter, as already suggested, furnishes the principal motive for business activity. Consumption must, for the sake of clearness, be sharply contrasted with mere *utilisation,* as for example of fuel or raw materials in manufacturing. The latter, although sometimes described by the misleading phrase "productive consumption," is really production itself.

Every individual is of necessity a consumer of economic goods. If he is not a producer as well, the world is made poorer because of his existence. What he eats, drinks, and wears is so much taken from the limited stock upon which all must subsist. Looked at from the point of view of the collective good, such an individual is either a recipient of charity or a parasite or both. In judging of a person's standing as a producer, full credit must be given for the creation of those immaterial goods upon which the world's happiness so largely depends. Services as well as commodities contribute to human

well-being, and the field of economic study would be barren indeed if they were left out of account. Allowance must also be made for the part which property, like land, buildings, etc., plays in production. In the United States the moral sense of the community approves on the whole of the institution of private property and hesitates to condemn a person who lives in idleness, so long as he confines his consumption to the goods which the income from his property enables him to purchase. It would be inaccurate, therefore, in the present stage of economic development to characterise such a person as either a recipient of charity or a parasite, although the presence of such persons in society itself constitutes a strong argument against the continuance of the institution of private property which makes their existence possible.

The State of Normal Equilibrium

It is important for the student to form a clear mental picture of economic goods or wealth as an aggregate. To this end production may be thought of as a vast network of pipes all conveying products, *i. e.,* valuable commodities and services, to a central reservoir, from which they are distributed by means of consumption pipes to the individuals who make up society. Obviously if the streams of goods entering through the production pipes are just equalled by the streams of goods passing out through the consumption pipes, society's wealth is neither increasing nor decreasing. This is the situation described later as that of *normal equilibrium.* It is full of scientific interest because while it continues economic forces just balance each other and opportunity is afforded to study the business world as it would be if all influences were permitted to work out their full effects free from disturbing changes.

Effort and Sacrifice Involved in Production

§ 28. Most goods are limited in supply (and consequently valuable) simply because business activity is needed to create them. To the extent that business entails effort it is obvious why its products must normally have value. If they did not, business men would be under no inducement to produce them. But business is often merely a form of pleasurable activity. Why, it may be asked, are not goods which it is a pleasure to create, such as the products of talented artists, multiplied until they become free like the superabundant gifts of nature? Two circumstances prevent such a result.

In the first place artistic talent is rare in comparison with the demand for artistic products. Even if all artists of first-rate ability were so constituted that they could derive unalloyed pleasure from their work during ten hours out of every twenty-four, there would still be a scarcity of artistic products which would prevent them from being free goods. But few if any artists are able to work even ten hours a day without incurring a sacrifice, and this is the second circumstance. Production and consumption are mutually exclusive and each takes time. It follows that the hours spent, no matter how pleasantly, in production, are hours substracted from the consuming period. As long as the hours devoted to business activity afford more pleasure than would the same hours devoted to leisurely consumption, the former involves no sacrifice. But as work is continued through the day it loses in interest, while leisurely consumption gains in attraction. In consequence after a few hours' toil the balance is usually turned and work, even though still pleasurable, ceases to be more pleasurable than consumption. In this situation to continue to produce is to make a sacrifice. As the economic man declines to put forth effort that is not rewarded in valuable products, so he declines to incur sacrifice that is not similarly recompensed. This fact limits the supplies of all goods except those which nature furnishes in superabundance, and is one of the fundamental causes of value.

It might be thought that improvements in methods of production would increase the number of free goods, but experience seems to show that wants multiply even more rapidly than processes improve and that the number of free goods is growing smaller rather than larger as time goes on. Even water and pure air, to people who live in cities, are now among the economic goods which command a price.

The Cost of Production

The sum of the efforts and sacrifices that are involved in production constitute what is known in economics as the *cost of production*. They are the advances which must be recompensed in the value of the product, if actual loss in well-being is to be avoided. Under favourable circumstances such cost involves only sacrifices, that is, the doing of things that are less pleasurable than other things that might be done,

but free from any element of pain. The tendency of evolution appears to be clearly towards bringing all costs to this level. As the same productive tasks are performed generation after generation human organisms become adapted to them so that children do with ease what their fathers could do only with difficulty and effort. If methods of production were not constantly changing so that muscles and nerves are required to adapt themselves to ever new situations a stage might soon be reached in which all production would be painless. This is one of the goals towards which economic progress should consciously be directed.

To be contrasted with the costs of production, which are psychological or subjective, are the *expenses of production,* that is, the advances made for materials, labour, and all the other things which co-operate in bringing about productive results. The latter are objective and may be expressed as sums of money comparable with the prices received for products.

Work and Pay

§ 29. Until the last one hundred and fifty years it was customary for most families to produce for themselves most of the things which they required. Under such conditions the relation between work and pay was very simple. Each person got all or a portion of the identical things which he produced and was made to feel keenly his dependence upon his own exertions and upon favouring natural conditions. The introduction of machinery and the era of specialisation to which it has given rise have changed this situation. At present most families produce but little for their own direct consumption. Those who dwell in cities and towns, and even those who dwell in the country, produce for the most part for the market and rely upon the market for the things which they require. Nor is this the only complication. The great majority in modern communities produce as hired workmen and have no direct share in what they produce nor knowledge of the conditions under which the product is marketed. They receive as their compensation wages or salaries agreed upon beforehand and shift to their employers responsibility for the success of the productive process in which they are engaged. Under these conditions the problem of work and pay has become one of the most difficult in the whole field of economics.

The World's Workers

Foremost among the world's workers are the so-called *captains of industry* or *entrepreneurs** who direct industrial processes. Their remuneration comes to them as *profits* or balances left over from the sale of products after all of the expenses of production have been paid. Below them are the *lieutenants of industry,* the salaried managers and bosses, and at the bottom the rank and file of the industrial army which is paid its remuneration in the form of monthly, weekly, or daily wages. A complete explanation of wages involves a study of the causes that determine the prices of the products of industry out of which money wages ultimately come, of the circumstances which determine labour's share of these prices, and finally of the terms on which money wages are exchanged for the goods which labourers consume, since the latter constitute the *real wages* of labour. Each one of these subjects of inquiry represents an obstacle which under present conditions intrudes itself between the product of labour and the pay of labour and causes wage-earners to feel themselves dependent for their remuneration upon the good-will of employers even more than upon the quantity and quality of their work or the favourableness of natural conditions.

Wages

Under the manorial system the most important influence fixing the pay of villeins was, as has been shown, the custom which determined how large an allotment of land the villein should receive and what services he should render in exchange for it. In the age of Elizabeth custom was supplemented by law and judicial regulation in the determination of this important matter. Not only were laws passed fixing the rate of pay for particular kinds of work, but the general rule was established that the justices of the peace should have power to regulate wages. Neither custom nor law now plays much part in the fixing of wages. Their determination is left to free bargaining in all Western countries, and it is difficult for most people to even entertain the idea of a different system. Of no country is this more true than of the United States. American courts have over and over again declared that the rights

*The English equivalent of this word, "undertakers," is occasionally employed in the above sense, but is open to obvious objections.

to liberty and to property guaranteed in all of the State constitutions embrace the right of employer and employee freely to contract or bargain, and that laws attempting to abrogate freedom of contract and to put in its place custom or legal regulation as the determinants of wages are unconstitutional. As is pointed out in the chapter on the Legal Regulation of Labour, there is reason to think that judges have gone too far, at times, in their application of this principle, but its fundamental importance to the present industrial organisation is beyond question.

Property and Its Earnings

§ 30. Next to the right freely to contract, the right to property is the one most jealously guarded by modern governments. The significant aspect of the right to property in this connection is the right to use it as a means of securing income. English and American law distinguishes between real and personal property. Economics, in rough conformity to this classification, distinguishes between land and other gifts of nature, and *capital goods,* that is, *products of past industry used in the present as aids to further production.* Both forms of property afford incomes to their possessors, that from land being known in economics as *rent* and that from capital goods as *interest.*

The problem of property and its earnings is quite as complicated as that of work and pay. In it are involved not merely economic, but moral relations of the profoundest significance. The economist must not merely explain the reasons for the earnings assigned to property and the circumstances that determine their amount, but he must also supply the basis for a wise decision as to the social utility of the system which permits these earnings to go to individual property owners. It is customary in treatises on economics to group together all of the problems connected with work and pay and property and its earnings into one great department of the study known as *Distribution.* This has to do with the causes which determine the division of economic goods between the individuals in industrial society. It is the concluding stage in the process of production, and a necessary preliminary to consumption.

The Methods of Economics

§ 31. The methods of economics are the same as those of other sciences, but the complexity of the phenomena treated makes great caution as to the use of these methods necessary.

Deduction

The method upon which most reliance was placed by the older English economists was the deductive, or *a priori*. It consists, as treatises on logic explain, in reasoning from general propositions to their particular applications. In economics many of the most important of the general propositions or premises used are borrowed from other sciences (*e. g.*, psychology, law), and this makes some knowledge of these subjects an indispensable part of the mental equipment of the economist. When a premise is only roughly accurate, as is for example the assumption that wages are determined in the United States by free and equal bargaining between employers and employees in which each pursues his own interest with the same persistency and the same knowledge of the situation as the other, it goes without saying that conclusions will be only roughly accurate also, and will need to be tested if not corrected by experience. Since rough accuracy is all that can be claimed for most of the assumptions used in economics, the student must be particularly careful to weigh the conclusions reached at each stage of a long deductive argument, before he attempts to give them practical application.

Induction

The inductive, or *a posteriori*, method is just the reverse of the deductive, since it consists in summing up a number of particular propositions in a general conclusion. By means of induction the detailed observations of like phenomena, which result from the field work of science, are grouped together in general statements. The latter then serve as the premises for deduction, which carries the conclusion beyond the range of direct observation. To be sure of the accuracy of the result the scientist must appeal to observation again as a means of verification. The progress of science thus begins and ends with observation.

Statistics

Where the phenomena to be observed are as numerous as they are in economics, induction may take the form of *statistics*. Individual instances of the same phenomenon are counted and the result given in numerical form. By means of statistics a quantitative value is given to the conclusions of induction which justifies greater confidence in them. The statistical method is applicable as yet to only the simpler problems of the science, but such progress has recently been made in the col-

lection and tabulation of statistics that there is every reason to anticipate results of steadily increasing importance from its use in future years.

The Laws of Economics

§ 32. Much confusion exists in regard to the nature of the laws of economics. Some writers declaim against governmental policies which they do not like on the ground that they are violations of economic law. Others are equally vociferous in affirming that economic law cannot be changed by any act of the legislature. Neither statement, as it is ordinarily understood, is true of economic law in the scientific sense.

A scientific law is a statement of the relation that is believed to obtain between phenomena. This relation may be one of coexistence or of sequence. To illustrate, it is a law of economics that the prices at which identical units of any good are sold in markets between which such units may pass freely without any deterioration in quality or loss in quantity, will not for any length of time differ by more than the expense of carriage between such markets. This is a law of coexistence which is proved by deductive and confirmed by inductive reasoning. Again, it is a law of economics that an increase in the supply of the units of any good offered for sale in any market tends to lower the price that can be secured for it. This is a law of sequence. In both cases, it should be noted, there is implied or expressed the absence of disturbing factors. Free communication between the markets must be maintained or the first law ceases to hold good. The second law describes a tendency. The increased supply may not actually cause a fall in price because it may be offset or more than offset by an increase in demand. In the statement of all economic laws it is taken for granted that other things remain the same so that the influences upon which the operation of the law depends will have an opportunnity to work out their normal effects.

To be contrasted with law in the scientific sense, are law in the moral and law in the juristic sense. Moral law states not what is but what ought to be. It is in this sense often that the term economic law is used when particular policies are said to violate it. It needs no argument to prove that such a use of the term has no place in a scientific treatise. Law in the

juristic sense has already been defined and is not likely to cause confusion.

The Necessity of Recasting Economic Laws

The statement that economic law cannot be changed by legislation is literally true. It is equally true, however, that economic conditions may be changed by legislation and that this may render entirely inapplicable economic laws that were previously significant. The development of the legal system of each industrial society makes necessary a continuous recasting of the laws of economics if that science is to remain in vital relation with actual business conditions. Old premises must be discarded and new premises in harmony with the new situation must be formulated. For this reason the implication of the statement "economic law cannot be changed by legislation," that is, that legislation cannot give a new direction to economic forces and in that way modify old relations between economic phenomena, is quite misleading.

Outline of Book

§ 33. In the following chapters the different divisions of economics are treated in the order suggested in the preceding survey. The subject of consumption is first discussed as an introduction to a fuller treatment of value and price. Then follow chapters on production and distribution, in which the leading principles of the subject are explained. The work concludes with chapters on money and on problems of the day falling within the scope of economics. In the closing chapter, on Economic Progress, suggestions scattered through the book are brought together with a view to showing the direction in which industrial society is believed to be moving.

Conclusion

As a conclusion to this preliminary survey a word of caution may not be out of place. Economics is an intensely human study. Dealing as it does with relations upon which the well-being of individuals and even of whole social classes depends, it makes constant appeals to the sympathies. This fact serves to make it interesting, but it has the disadvantage of appealing to the emotions, when emotion can only serve to bias the judgment, as well as when it may help to right wrongs and to promote progress. In studying the principles of economics, passion, except the passion for truth, is out of place. What is needed is the same calm judgment that has done so much to advance the natural sciences. The student should constantly

have in mind the thought that his primary task is to explain existing business relations. He must understand how they came to be, and the forces that perpetuate them. He must detect the laws which govern them and try to see them in their proper perspective as features in a great evolutionary process. Only when he has fulfilled this purely scientific part of his task is he equipped to take up the discussion of practical problems and to throw his weight on this side or that in accordance with the dictates of his trained judgment. If he takes his task seriously he is very apt to discover that, as he comes to understand the interaction of economic forces better, he is less confident in his demands for changes and less sanguine of his ability to accomplish even those modifications in law or practice which he still believes to be desirable. He need not fear, however, that the results of his study will be purely negative or that the subject will lose its fascination as he penetrates more deeply into it. It will remain to the end intensely human, and for every radical change that is discountenanced by better knowledge, a hundred minor changes will suggest themselves, many of which he may himself live to see fulfilled. In place of the feeling that the world is hopelessly awry, which so often oppresses high-minded people when they observe the injustices and inequalities to which the poor are daily subjected and the false and vulgar standards that are too frequently characteristic of the rich, the conviction is likely to grow in his mind that an evolutionary process is going on which has for one of its results a gradual improvement in the conditions under which the mass of men live and work. This conviction should not and will not lessen in the least his desire to contribute his share towards a more rapid progress, but it will help to reconcile him to conditions which are only tolerable because they are temporary.

REFERENCES FOR COLLATERAL READING

**Marshall*, Principles of Economics, Books I. and II.; **Clark*, The Philosophy of Wealth, Chap. I.; *Walker*, Political Economy, Part I.; *Ely*, Outlines of Economics, Chap. X., Book I.; Chap. I., Part I., Book II.; **Gide*, Political Economy, Book I.; *Keynes*, The Scope and Method of Economics; *Palgrave*, Dictionary of Political Economy, articles entitled "Economic Science," "Method of Political Economy," etc.

BIBLIOGRAPHICAL NOTE

Because of the diversity of views which it presents, the literature of economics is likely to prove confusing to one who takes up the study for the first time. In order to see the relation between different writers and different schools, the beginner will do well, before he ventures far into the subject, to read a brief history of economic theory.

Ingram's *History of Political Economy* and Price's *Political Economy in England* may be recommended for this purpose. Cannan's *History of Theories of Production and Distribution* may then be read in connection with the works which it discusses. It will be found helpful to learn something about each author before reading what he has to say on any particular topic, and to this end dictionaries of political economy should be used. The standard English work is Palgrave's *Dictionary of Political Economy*, in three volumes. Readers of German should consult also Conrad's admirable *Handwörterbuch der Staatswissenschaften*, in seven volumes, while readers of French will find Say's *Dictionnaire d'Économie Politique*, in two volumes, helpful.

The principal writers who have contributed to the literature of economics available in English may conveniently be distinguished into four groups:

I. "The English classical school" is the term applied to Adam Smith (*The Wealth of Nations*), Malthus (*Essay on Population*), Ricardo (*Principles of Political Economy and Taxation*), and John Stuart Mill (*Principles of Political Economy*), and their followers. Rae's *Life of Adam Smith*, Bonar's *Malthus and His Work*, and J. S. Mill's *Autobiography* may be read with profit in connection with the works of these authors.

II. A reaction against the doctrines and method of the classical school began about the middle of the last century, and to it the term "historical school" is usually applied. The chief representatives of this school in Great Britain were Cliffe Leslie (*Land Systems and Industrial Economy of Ireland, England, and Continental Countries; Essays in Political and Moral Philosophy*) and Toynbee (*The Industrial Revolution*). The school has had its greatest development in Germany, where it is now represented by Gustav Schmoller (*The Mercantile System*) at the University of Berlin, Karl Bücher (*Industrial Evolution*) at the University of Leipsic, and other distinguished economists.

III. A reaction against the classical school in quite a different direction is usually spoken of as the "Austrian school" because of the large part which the Austrian economists Carl Menger, Böhm-Bawerk, and Wieser have played in its progress. In Great Britain it has been represented by Jevons (*Theory of Political Economy; Money and the Mechanism of Exchange*) and Smart (*Introduction to the Theory of Value; Distribution of Income*). The important works of Böhm-Bawerk (*Capital and Interest; The Positive Theory of Cap-*

ital) and of Wieser (*Natural Value*) have also been translated into English, by Professor Smart and one of his pupils.

IV. Few contemporary British or American writers would care to be classed rigidly with either of the three schools referred to. For that reason it seems best to treat them as a separate group. Prominent among English economists are Marshall (*Principles of Economics; Economics of Industry*), Edgeworth (articles on The Measurement of the Value of Money and other topics in the *British Economic Journal*), Nicholson (*Principles of Political Economy*, 3 vols.; *Money and Monetary Problems*), Cannan (*Theories of Production and Distribution*), Bonar (*Philosophy and Political Economy; Malthus and His Work*), Rae (*Life of Adam Smith; Contemporary Socialism; Eight Hours for Work*), Bastable (*Public Finance; The Theory of International Trade*), and Hobson (*The Evolution of Modern Capitalism*).

Among American economists should be mentioned the late General Walker (*Political Economy; The Wages Question; Money; International Bimetallism*) and the late Professor Dunbar (*Theory and History of Banking*). Prominent among contemporary writers are Sumner (*History of American Currency; Lectures on the History of Protectionism in the United States*), Clark (*The Philosophy of Wealth; The Distribution of Wealth*), Patten (*Consumption; The Theory of Dynamic Economics; The Theory of Prosperity*), Adams (*Relation of the State to Industrial Action; Public Debts; The Science of Finance*), Hadley (*Railroad Transportation; Economics*), Ely (*Problems of To-day; Outlines of Economics; Monopolies and Trusts*), Seligman (*Essays in Taxation; The Incidence of Taxation; The Economic Interpretation of History*), Taussig (*Tariff History of the United States; Wages and Capital*), and Jenks (*The Trust Problem*).

Although by no means exhaustive the above list of authors and titles will serve to give some idea of the scope of the general literature of economics. It may be supplemented by the excellent bibliographies contained in the following works: Bowker and Iles, *The Reader's Guide in Economic, Social, and Political Science;* Cossa, *Introduction to the Study of Political Economy;* Bullock, *Introduction to the Study of Economics;* Dewey, *Financial History of the United States.*

Much of the contemporary literature of economics must be sought in the monographic series published by the American Economic Association and by the leading universities. The principal periodicals devoted in whole or in part to economics are: *The Quarterly Journal of Economics* (Harvard University, 1886–1903, 17 vols.); *Political Science Quarterly* (Columbia University, 1886–1903, 18 vols.); *Annals of the American Academy of Political and Social Science* (Philadelphia, 1890–1903, 21 vols.); *The Yale Review* (Yale University, 1892–1903, 11 vols.); *The Journal of Political Economy* (Chicago University, 1892–1903, 11 vols.); *The British Economic Journal* (British Economic Association, London, 1891–1903, 13 vols.); *The Economic Review* (London, 1891–1903, 13 vols.).

CHAPTER IV

THE CONSUMPTION OF WEALTH

Characteristics of Human Wants

§ 34. Consumption, as has already been suggested, is the part of economics which treats of the relations between wants and the means to their satisfaction, goods. The characteristics of wants first demand attention.

It is a familiar fact of human experience that wants are indefinitely numerous. Every day, in the consciousness of every normal person, many wants are felt which must perforce go unsatisfied. At times one may delude one's self with the belief that if only some pet desire were gratified perfect content would follow, but over and over again the discovery is made that when the wished-for gratification comes, other desires have arisen in its place and satisfaction is as far off as ever. The normal man is thus a being whose wants constantly run ahead of his ability to satisfy them. Upon this simple fact is based the law that *the consuming power of a community is indefinitely great.*

A second familiar characteristic of wants is that they are of very different degrees of intensity. This is realised as soon as one tries to arrange all of the wants of which he is conscious in a scale according to their importance. Such an endeavour reveals also the difficulty of measuring wants and the complexity of those which direct daily life. Corresponding to every want that comes within the scope of economics, is a utility or combination of utilities capable of satisfying it. The intensities of wants determine degrees of utility and thus, as is shown later, have great influence in fixing the values of the economic goods in which utilities are embodied.

Law of Diminishing Utility

§ 35. Variable as they are in intensity, all wants are subject to a law of gradual diminution and final satiety as consumption is continued. This may be illustrated by reference to food. A healthy American boy, given a breakfast of unlimited

buckwheat cakes, attacks the first plateful with great avidity. His eagerness is reduced by each additional plateful, until his hunger is satisfied and he must reluctantly confess that he has had enough. As an individual's capacity to enjoy food is limited, so is his capacity to enjoy clothes. A normal person feels intensely the need of one respectable suit of clothes, pair of shoes, etc. A second suit is less indispensable, but satisfies a lively desire. Additional suits satisfy wants of steadily diminishing intensities, and in time the point of satiety is reached even by the most fastidious dandy. Less material wants obey the same law. Eyes tire of beautiful pictures or beautiful scenes. Ears are deadened in time by even the sweetest music. In short, each receptive faculty is subject to exhaustion and requires time to recuperate. Upon this psychological principle is based an economic law of considerable importance, that of *diminishing utility*. We may formulate it as follows: *The utilities of additional units of any good to any consumer diminish normally as his supply of units of that good increases.* This law assumes, of course, that no change takes place in the character of the consumer as his supply is being increased.

Present *vs.* Future Goods

§ 36. The normal man lives in the present and will make greater sacrifices to insure the satisfaction of present than of future wants. Though very general, this characteristic of wants is more marked for some social classes than for others. It would not be far from the truth to say that young children and savages live entirely in the present; that the manual labouring classes, especially in climates where the winters are mild, look only a few months or a few years ahead in their economic calculations; that the great middle class of artisans and merchants plan with reference to their own lives and the lives of their children; and that the founders of great family fortunes include generations yet unborn in their view. The lack of providence of the coloured family, which, when told on Monday morning that it would be turned out if the rent were not paid by the following Saturday, agreed that then "they needn't begin to worry until Friday," is well-nigh incredible to sober and industrious workingmen of the white race. But equally unintelligible to careful and thrifty members of the class next higher

in the economic scale, is the readiness with which these same workingmen enter upon the responsibilities of married life without property or guarantee of continuous employment. It is in these psychological differences that economists discover a chief reason for the persistence of the inequalities of fortune, which are a principal cause of dissatisfaction with the present industrial system.

This fourth characteristic of wants is the basis of a second law in regard to utility which has reference to the *time* of consumption rather than to the *quantity* to be consumed. If goods available for present consumption are called *present goods,* and those to be available in the future—which may exist in the present as unfinished materials—*future goods,* the law may be formulated as follows: *The utility of future goods is less to the normal consumer than the utility of present goods of like kind and quality by an amount varying directly with the degree of futurity.*

Wants Determined by Social Standards

§ 37. A fifth and last important characteristic of wants is that most of them are determined by social standards of taste rather than by the independent judgments of the individual consumers. This is conspicuously true of wants for clothing, shelter, and forms of amusement. That men—not to say women—dress with reference to the opinions of their neighbours, changing the style of their shoes, their clothes, and even their collars and neckties, to conform to the vagaries of fashion, is a fact of familiar observation. There is a little more independence in the selection of dwelling houses, but here too the taste of the many is subservient to that of the few who form independent judgments. As regards amusements it is notorious that one fad follows another, bicycle riding giving place to golf and the latter to automobiling.

This tendency of whole groups of people to want the same thing at the same time has its good and its bad economic side. Its advantage is that it permits large-scale production, which means usually production at less cost in human effort than production on a small scale. As an offset to this, great waste results from constant changes in fashion, not only because goods are produced which no one will buy, but because the machinery, tools, and factories designed for their production must be

thrown away or adapted to new uses. Moreover, deference to social standards encourages a deadening uniformity in habits of consumption which is inimical to progress. This bad side is seen conspicuously in connection with architecture in the United States. Succeeding the colonial style of building came a series of styles each one worse than its predecessor. Slavish imitation of these bad styles has cumbered the earth from one end of the country to the other with ugly buildings which are the despair of architectural reformers.

The Law of Demand

§ 38. Closely related to the law of diminishing utility is the law of demand. Since successive units of any good satisfy less and less intense wants, the desire for successive units diminishes. *Demand,* as the term is used in economics, denotes *effective desire,* that is, *desire coupled with ability to pay the current price for the desired object.* The general law of demand is that it varies directly with changes in the intensity of wants and inversely with changes in the prices that must be paid for goods. To illustrate, the development of a new taste increases a person's demand for the good capable of satisfying that taste. More of that good will be purchased even though its price remains as before. On the other hand, even though a person's taste be unchanged he will be inclined to purchase more of a good whose price is reduced.

When demand increases or decreases readily in response to price changes it is said to be *elastic*. This is the case with the demand for goods which are on the border line between necessaries and comforts. A slight fall in the price of such goods brings them within the reach of many consumers who before could not afford them. At the other extreme are the very cheap necessaries used by all classes, such as potatoes, salt, sugar, etc., in the United States. A fall in the price of such goods will not increase the demand for them materially because everyone is already consuming them nearly down to the point of satiety. Where the conditions of production are variable, the costs of transportation prohibitive of shipment to distant markets, and the product itself perishable, it may, and often does, happen that the supply of goods for which the demand is inelastic exceeds the demand even at the lowest prices. At such times such goods become a drug in the market and any-

one may have them who will go to the trouble of carrying them away. This situation is not unusual in country districts in the United States with reference to such staple crops as potatoes and apples. The elasticity of the demand for a good thus has an important bearing upon the risks connected with its production. Elasticity of demand means stability of prices, inelasticity variability. To escape the latter in the case of commodities like salt, sugar, etc., for which the demand is quite inelastic, has been a principal motive leading to the organisation of some of the *trusts* discussed in Chapter XXV.

The Law of Variety

§ 39. The normal purpose of consumption is to afford pleasure. Since each kind of good is subject to the law of diminishing utility, the pleasures of consumption may be increased by attention to the law of variety. If a man has only corn bread for breakfast, to satisfy his hunger he must push his consumption of it beyond the point where it affords him appreciable satisfaction. If to his corn bread are added bacon, eggs, and coffee, he will be able to supply his body with adequate nourishment, without being obliged to eat corn bread after he has ceased to relish it. Eating has been taken to illustrate the law of variety because it is a universal experience, but the law applies equally well to other forms of consumption. It is really a corollary of the law of diminishing utility, since that law itself suggests the necessity of passing from one form of consumption to another to avoid the uncomfortable feeling of satiety. The ideal which the economic man should, and does unconsciously, have in mind is that of carrying each kind of consumption only to the point where it becomes less pleasurable than another form of consumption that may be enjoyed at the same expense. By changing to the new form of consumption whenever it affords the more pleasure, he is able to get the maximum satisfaction permitted by his income.

The great obstacle to varied consumption is the expense of a varied assortment of goods, and this is felt most keenly where men live in comparative isolation. Homesteaders in the western part of the United States, and others in similar situations, have to content themselves with rough and simple fare, clothing, etc., because it does not pay them to make, in the small quantities adapted to their wants, those little things which con-

tribute so much to the refinement of life. Every advance which tends to bring people into closer industrial relations is favourable to a more varied consumption and consequently to an increase in well-being. Recent improvements in transportation facilities encourage the hope that the varied markets of the city will one day be brought within the reach of every country family, while city families will be given opportunities to share the free goods of the country. Such an arrangement will add enormously to the general well-being.

The Law of Harmony

§ 40. Next to the principle of variety as a guide to judicious consumption stands the principle of harmony. Harmony of colour and form in dress is indispensable to a pleasing effect. In sculpture, painting, architecture, and music, harmony is the all-important requisite. Even in eating harmonious combinations are important, as is attested by the pangs of indigestion which follow the consumption of such combinations as candy and beer, or milk and lobster. In a comparatively new country like the United States the average man is more likely to ignore the law of harmony than the law of variety. The American tendency is to exaggerate the importance of quantity and size to the neglect of the subtle harmonies which alone give permanent satisfaction. As a result there is relatively little demand in the United States for the taste and talent of artists and skilled artisans and great demand for the uniform and too frequently ugly products of machinery. Through this perversion of taste consumers lose half the pleasure which their incomes are capable of affording. The effect on producers is equally unfavourable for reasons explained in the next section.

The Law of Least Social Cost

§ 41. A third aspect of consumption involves its relation to production. It is important, by attention to the laws of variety and harmony, to obtain the largest possible return from the stocks of goods available for consumption. It is equally important while securing a given return of pleasure from consumption, to select those goods which can be produced with the least expenditure of effort. This is the *principle of least social cost.* Its first application has reference to the natural conditions of a country.

Economic progress depends in part on the adaptation of men's wants to the productive capacities of the particular

regions which they inhabit. When colonists settle in a new country they bring with them a taste for the commodities they were used to at home. The soil and climate of their new environment are rarely suited to the production of these identical things, and hence their well-being depends for some time on the readiness with which they learn to like things for which the new soil and climate are suited. But men do not give up settled habits easily. They waste much time and effort in trying to make the land produce what they like, in place of learning to like what the land can best produce. Thus in America it took the early settlers a long time to substitute a diet of Indian corn for the diet of wheat and rye to which they had been accustomed in Europe, and many of their early disappointments were due to their unsuccessful efforts to produce the latter.

Adaptation of Consumption to the Environment

The law of least social cost prescribes consumption adapted to the productive capabilities of the environment. Obedience to it is brought about in time by an evolutionary process. Those who learn to like the things that can be most easily produced where they live and to thrive on them, have an advantage over their neighbours. In time their offspring multiply and people the land. But the process may be hastened by intelligent experiment, as has been repeatedly demonstrated in the industrial development of the United States.

A second application of the principle of least social cost refers to differences in the capacities and tastes of producers. Its importance may be shown by means of an example. Klotz is a poor German who has come to the United States with a talent for playing the violin and some knowledge of shoemaking as his stock in trade. He settles in a town where there is little appreciation for music, and must therefore become a shoemaker. The work is hard and uninteresting. Every day he thinks how much pleasanter it would be to play his violin, but he must stick to his last or starve. As time goes on the town grows and people come to be Klotz's neighbours who appreciate his violin playing even more than his shoemaking. Through their efforts a small orchestra is organised with Klotz as leader, and it is not long before fondness for the music this orchestra can produce has become so general that Klotz finds

Adaptation to Tastes of Producers

that he can discard his leather apron entirely and give all of his time to the work that is his pleasure as well as his means of livelihood. By a change of taste in the community a discontented shoemaker is transformed into a happy musician. If the change has been genuine the community gets a full return for what it gives Klotz for his music. It affords as much if not more pleasure than did the shoes which Klotz used to make, but added to this pleasure of consumers is the newfound happiness of Klotz, the producer.

Progress Due to Changes in Taste

As this illustration suggests, the things that people want and are willing to pay for are the things that must be produced. As consumers the members of society determine how they shall as producers spend their time and effort. As regards the necessaries of life consumers have perhaps no very great range of choice. They must learn to like those things that can be produced most easily in the given environment. If Klotz, the musician, gives up making shoes, someone else, who finds the task more congenial, must make them. But only a part of the community's income is spent for necessaries. If it prefers as comforts and luxuries articles which can be most advantageously produced in factories where automatic machinery impresses its standards of unvarying uniformity not only upon the products turned out, but also upon the operatives engaged in making these products, then the ranks of factory labour must be crowded and other occupations must be neglected. If, on the other hand, it prefers music and objects of beauty, each one, however simple, reflecting the individuality of the artisan who has fashioned it with loving thought, then musicians, artists, and artisans will find remunerative employment and quite a different tone will be given to the common industrial life. A community's taste thus gives direction to its work and decides for better or for worse the kinds of lives that its members shall live.

Adaptation to Laws of Economical Production

The law of least social cost has still another application. As will be shown in a later chapter * the principle that large-scale production is more economical than small-scale production is subject to important exceptions. In some cases, as for example in the production of agricultural products from a limited area,

* Chapter VI.

after cultivation has been carried to a certain point, to secure more products requires more rather than less proportionate labour. From the point of view of social cost it is obvious that increased consumption of articles of this sort is less advantageous than increased consumption of commodities whose cost decreases as the quantity produced grows.

The point that it is important to note in connection with each of the applications of the law of least social cost that have been given, is that the reduction of cost which may be secured by a simple change of wants involves no corresponding reduction in the pleasures of consumption. Consumers continue to be as well off as before, while producers are better off. Thus changes in wants may add to economic well-being just as effectively as changes in methods of production and are quite as worthy of the attention of economists.

Economical Consumption

§ 42. The most obvious relation between consumption and production grows out of the fact that consumers are also producers, and what they eat, drink, and wear, the houses they live in, and the amusements they enjoy, have a determining influence on their efficiency. The ways in which different forms of consumption affect productive efficiency are more properly treated in the chapters on production. At this point attention will be called merely to the economy of different lines of expenditure, especially expenditures for food.

Through careful experiments physiologists have ascertained with some degree of accuracy the amount of nutrition which the average man requires each day when engaged in different kinds of work. It is customary to express this as so many calories * of heat energy, including so many grammes of the indispensable protein or tissue-building compounds. The daily allowance made for the average man at moderate muscular work by Professor Atwater, an American authority in this field of investigation, is 3500 calories, including at least 125 grammes of protein compounds. Men at hard labour and athletes in training require more, while brain workers appear to require somewhat less.

Having established a standard, the next step is to analyse

* A calorie is the amount of heat energy required to raise one pound of water 4° Fahrenheit.

Nutritive Value of Different Foods

different kinds of food to ascertain their nutritive value. Such analyses have now been made of more than two hundred of the different foods in ordinary use in the United States.* Economical consumption is secured when the cheapest combination of foods containing the required ingredients and both palatable and digestible for the given consumer, is selected. No general rules can be laid down because of differences in the tastes and incomes of different consumers, but it is interesting to note the relation in which the food values of different foods stand to their cost. Professor Atwater has drawn up a table† giving the quantity of each of several different kinds of food which might have been purchased for ten cents on a given day in New York City, and the amount of nutrition which each contained. From this it appears that from the point of view of protein contents the most economical foods were preparations of wheat, corn, beans, oatmeal, beef for stewing, and salt cod, while from the point of view of potential heat energy the most economical were wheat flour, cornmeal, oatmeal, potatoes, beans, salt pork, and sugar. The table seems, on the whole, to bear out the common impression that a vegetable diet is much more economical than a diet consisting largely of meat, and that the cereals, wheat, corn, beans, and oats, are the most economical of the vegetables.

Science has, until recently, done very little to aid the ordinary man to direct his consumption wisely and economically, although every investigation into the consuming habits of the poorer classes reveals the fact that, small as are their incomes, a considerable part is wasted because the most economical foods, clothing, etc., are not selected. The importance of this phase of domestic economics is now fully appreciated and there is every indication that rapid progress is being made, especially in the larger cities, towards making consumption economical.

Luxury

§ 43. Closely related to the question of economy in consumption is the question of luxury. As wealth is now distributed, the majority of families in every community must be economical in order to secure with their limited incomes the necessaries and ordinary comforts of life. Contrasted with them

Cf. Atwater, Farmer's Bulletin, No. 142.

† *Ibid.*, p. 40.

are the smaller number of families whose incomes are large enough to permit the enjoyment of luxuries. The question whether under such circumstances expenditure for luxuries is defensible is a question of morals rather than of economics, but the economist may well be called upon to decide which of the possible uses of surplus income available for luxuries is calculated to contribute most largely to the general well-being.

To give precision to the discussion, luxuries may be defined as all economic goods which are not necessaries. The latter term includes not merely the food, clothing, and shelter necessary to life, but the entire complex of goods which each industrial class finds necessary to its industrial efficiency. The decision as to what these goods are is not to be made by reference to any absolute standard, but through study of each class affected. For example, manual labourers in the United States would certainly include tobacco among the necessaries of life and the economist should include it also in discussing their problems, for the simple reason that the average manual labourer would continue to buy tobacco even though his earnings were too small to allow him to buy in addition goods indispensable to his industrial efficiency. Tobacco is to him a "conventional necessary." A formal definition of economic necessaries would thus be: the things absolutely essential to the industrial efficiency of the average family in the class considered, together with the things that are preferred above the absolute necessaries by the member of the family who directs its consumption.

Necessaries for All before Luxuries for Any

It is obvious from the above definition that failure on the part of any family to secure the necessaries of life is injurious, not only to it, but to the whole community. Under-consumption means under-nutrition and loss in industrial efficiency. If permitted to continue it must inevitably undermine the standards which make a family self-supporting and self-sufficient and reduce its members to dependency. The general interest requires, therefore, acceptance of the maxim: the consumption of luxuries should be deferred until all are provided with necessaries. This is a moral principle that commends itself to all civilised communities and finds indirect expression in positive law. The obstacle to its practical application is the difficulty

of supplementing the incomes of independent families, when those incomes are insufficient, without undermining their independence or permanently lowering their earning power. Among the measures that have been taken to surmount this obstacle are different plans of industrial insurance, by means of which the families of workingmen are assured necessaries in times of illness, and the erection of government employment establishments in which those in search of work may earn necessaries while they are looking for other positions.

The Point of View

In the United States, in times of ordinary prosperity, all but the very lowest in the industrial scale have not only sufficient income to provide for necessaries, but some surplus income. Assuming that necessaries are assured to everyone, the question arises as to the use to which surplus income may most economically be put. According to strict utilitarian doctrine—which is another name for economic morality—the happiness of any one person is just as important quantity for quantity and quality for quality as the happiness of any other, and hence surplus incomes should be used so as to add equally to the happiness of all. This suggests that no one is justified in spending income for a luxury for himself or his family which will afford less happiness than would the same income spent for a luxury for someone else or for some other family. The difficulty is that independent, self-respecting people do not want luxuries bought with other people's money. If the pleasures connected with economic goods are to be equalised it must be in some roundabout way. Without trying to exhaust the subject a few words may be said about each of the ways in which surplus incomes are usually employed.

Fallacies Respecting Luxury

Notwithstanding the denunciation of moralists it is still true that surplus incomes are largely expended on luxuries for the gratification of the spender himself, his family, or his immediate friends. In justification it is often urged by superficial observers that such expenditures "make work" for others and hence benefit them indirectly if not directly. This argument can be presented with a good deal of plausibility so long as only the one use of the income under consideration is thought of. A wealthy man gives an elaborate ball. In connection with it he employs decorators, caterers, waiters, etc. Those whom he

invites employ dressmakers, hairdressers, etc., in their preparations for the event. The expenditure on the ball thus causes an active demand for labour of various kinds, which, but for the ball, would not have been required. Those who secure employment certainly regard such an entertainment in the light of a blessing. But consider other uses to which the money spent upon the ball might have been devoted. Suppose that it had been given to a wisely administered charitable society for use in improving the condition of the poor. In such an event it would have been spent also largely for food, clothing, and personal service, "making work" for numerous individuals who might otherwise have sought in vain for remunerative employment. So far as its effect on the labour market as a whole is concerned it would certainly convey as much benefit in the second case as in the first. Similar results would follow its expenditure in any other rational way. Even if it were not spent at all, but allowed to accumulate as a deposit in a bank, there is reason to think that it would "make work" for quite as many people as when used for the ball. Banks do not keep their funds in their vaults, but lend them out at interest to business men who employ them in connection with their businesses. This usually means buying materials, hiring workmen, etc., and has as favourable an effect on the labour market as luxurious expenditure. Unless, therefore, the transient pleasure of a few people who are already satiated with balls and similar diversions is to be esteemed above the lasting improvement of a great many people whose lives are all too bare of sunshine, the "make-work" argument can hardly be held to justify selfish luxury. The truth is that any rational mode of using income stimulates certain branches of industry and is to that extent beneficial to the small class of producers concerned. Money income represents an unassigned share in society's limited store of economic goods. If that share is taken and consumed in a form that affords little happiness, society is so much the worse off than if it had been taken in a form that afforded much happiness.

Defensible Luxury

But, it should be added, there are luxuries and luxuries. Those who have large incomes to administer may contribute much to social progress by setting standards of rational enjoy-

ment for others to imitate. The rich man who wishes to live in a grand way does the community little good if he buries himself like a hermit in an ugly palace. If, on the contrary, he builds a beautiful house to which a large and democratic circle of friends is welcome, he may do quite as much good as he could by giving his income in charity.

Saving *vs.* Spending

§ 44. A third use which many economists still urge as the best to which surplus income may be put, is saving and investment. In contrast to purely selfish luxury, saving deserves all of the praise it has received. Wise investment adds to society's material equipment of tools, machinery, buildings, etc., for the production of economic goods. Hence it lightens the toil necessary to the realisation of a certain productive result. Even more important is the fact that, through saving, a family may make itself economically independent, not in order that it may turn its attention from useful industry, but that it may devote itself to the work that most needs to be done even though the world has not yet learned to appreciate it and remunerate it in proportion to its importance.

It may be doubted whether, under present conditions, saving beyond what is necessary to assure economic independence benefits the world as much as would wise spending for some social object. Great wealth is almost if not quite as demoralising as great poverty, and the man who really desires to contribute to social improvement will put a check upon his accumulations and give his time and thought to spending such income as he does not require for his own family in ways that will benefit others. If he continues to save he must finally, in drafting his will, face the problem of the best use of wealth. Passing on to his heirs more than is necessary to insure them economic independence is merely evading an issue which each should face squarely for himself.

Statistics of Consumption

§ 45. It is much easier to ascertain how men earn their incomes and how much their incomes are, than how they spend them. In fact few families have very exact knowledge on the latter point themselves. They know how much they pay for house rent, perhaps how much they spend for coal and gas, but few keep accurate accounts of their expenditures for food, clothing, and the incidentals that are an important element in

all but the humblest budgets. Nevertheless several useful investigations into statistics of consumption have been made and certain general relations have been established. About the middle of the last century inquiries were made in Belgium and Saxony into the expenditures of different families, and upon them two economists, Ducpétiaux and Engel, based the following table showing the proportional expenditures of different classes for different purposes in the two countries:

Table of Expenditures of a

	Self-supporting Labourer's Family in Belgium		*Self-supporting Labourer's Family in* Saxony		*Middle-class Family in* Saxony		*Well-to-do Family in* Saxony	
Food,	61%	91%	62%	95%	55%	90%	50%	85%
Clothing,	15		16		18		18	
Rent,	10		12		12		12	
Fuel and light,	5		5		5		5	
Tools, etc.,	4							
Education,	2		2		3·5		5·5	
Taxation,	1		1		2		3	
Care of health,	1		1		2		3	
Personal service,	1		1		2.5		3·5	

This table does little more than to confirm general observation, but when it is considered how often general observation leads to false conclusions even such confirmation is of value. Wage-earners spend nearly all of their incomes in providing for the satisfaction of their merely physical wants. They have little left for the higher needs of their natures, and if these are to be cared for it must be through community action realising itself in free public schools, free playgrounds and parks, free concerts, free lectures, etc. People in more comfortable circumstances spend relatively less for food and relatively more for education and personal service. Expenditures for clothing and rent show no diminution, probably because clothes and houses are regarded as marks of social position and the desire for social esteem is so strong that a large part of surplus income is devoted to keeping up appearances.

Consumption in the United States

A more recent investigation into statistics of consumption was made by the United States Department of Labour to ascertain the importance of different kinds of commodities in the

everyday life of representative families. The results of this inquiry are summarised in the following table:

*Expenditures of Representative American Families**

Family Income	Percentage of Expenditure for				
	Food	Rent	Clothing	Fuel and Lighting	All Other Purposes
Under $200	49.6	15.5	12.8	8.1	14.0
$ 200–300	44.3	14.7	14.3	7.6	19.2
300–400	45.6	15.0	14.1	7.0	18.3
400–500	45.1	15.3	14.4	6.6	18.6
500–600	43.8	15.2	15.3	6.6	19.1
600–700	41.2	15.5	15.9	5.9	21.6
700–800	38.9	15.6	16.3	5.3	23.9
800–900	38.1	16.1	15.1	5.3	25.5
900–1000	34.3	14.9	16.8	4.7	29.1
1000–1100	34.7	15.1	17.5	4.5	28.1
1100–1200	30.7	12.2	16.5	3.9	36.7
1200 and over	28.6	12.6	15.7	3.0	40.1
All sizes	41.1	15.1	15.3	5.9	22.7

This table is based on a study of as many as 2562 family budgets and is even more suggestive than the former because of its more careful classification of expenditures according to the family income. It indicates the same general relations. Expenditures for food diminish relatively as the family income grows, and the difference is made up by a relative increase in the expenditures for the satisfaction of other than merely physical wants. Expenditures for rent bear a fairly constant relation to the total income, while expenditures for clothing show a tendency to increase slightly.

Family Budgets

Other interesting inquiries into family expenditures recently made are referred to at the end of the chapter. That published under the title *Family Budgets* gives an account of the expenditures of typical working-class families in England, and is interesting because it emphasises the differences to be found in the consuming habits of families even in the same industrial and social class. This indicates that a very large number of budgets must be compared to prevent individual differences from giving a false bias to the investigation.

There is perhaps no branch of economics so much in need

* Seventh Annual Report of the Department of Labour, 1891, p. 864

of development as that dealing with the statistics of consumption. A first step towards fuller knowledge in this department of the subject would be to induce representative families to keep accounts in accordance with some simple plan, so that information might be obtained upon which to base statistical comparisons. Residents in Social Settlements may do useful work in this field by supplying their neighbours with handy account-books and directing them in keeping records of their expenditures. Such records would be valuable for comparison with other calculations, and also the habit of keeping them would be found a help in determining how income might be best employed.

Two Aspects of Consumption

§ 46. The subject of consumption may be looked at economically in two different ways. The more familiar way is to regard it as the goal of economic activity and to show how the desire for goods causes them to have value and price and induces people to engage in industrial pursuits. Though perfectly valid as far as it goes, this aspect of consumption must not be exaggerated. The other way of looking at it is as a means of restoring energy. The consumption of goods necessary to efficiency is not merely an end; it is a means to further production. Human beings are not mere goods-consuming automatons. They enjoy activity for its own sake, and the more highly developed they are, the more they are likely to look upon goods as means to the forms of activity they prefer, rather than as ends in themselves. It follows that desire for goods is only one, if the most important, of the motives which control the economic man. Desire for activity is another motive which in individual instances quite outweighs the desire for goods.

Conclusion

At the present stage of human and social development the former of the above ways of regarding consumption is believed to be the more accurate and helpful to an understanding of economic phenomena. The latter is, however, applicable already to many individuals and classes and must be kept in view in connection with all problems looking to the future. Economic phenomena are related not as cause and effect simply, but in a continuous circle of causation. Men produce, that is, expend energy, in order that they may consume; but they consume,

that is, store up energy, in order that they may again plunge into the activities of production. The ideal round is one in which the pleasures of production are as definite and real as the pleasures of consumption. Unfortunately the conditions of production are still so arduous for the mass of men that work is usually entered upon unwillingly and only under the stimulus of the prospect of pay. In the thought of the average man consumption, or the desire to consume, thus stands as the motive for production. In the following chapters the point of view of the average man is accepted, and economic phenomena are explained by reference to it. The other point of view which finds work a joy, and goods merely aids to further work, receives attention in the closing chapter on Economic Progress.

REFERENCES FOR COLLATERAL READING

**Patten*, The Consumption of Wealth, and Dynamic Economics; *Hearn*, Plutology; **Marshall*, Principles of Economics, Book III.; *Ely*, Outlines of Economics, Book II., Part IV.; *Mayo-Smith*, Statistics and Economics, Book I., Chap. II.; **Atwater*, Farmer's Bulletin, No. 142, published by the U. S. Department of Agriculture; Sixth and Seventh Annual Reports of the United States Department of Labour, 1890 and 1891; Family Budgets collected by the Economic Club of London, 1891–1894; **Rowntree*, Poverty, a Study of Town Life, Chaps. VI., VII., and VIII.

CHAPTER V

VALUE AND PRICE

§ 47. As already explained, the term value is used in economics in two different senses, one subjective or pertaining to the relation between men and goods, and the other objective or pertaining to the relation between goods and goods. We will begin this chapter with an analysis of the principles which govern values in use, or values in the first sense, and consider then the relation between such values and the ratios at which goods exchange for each other, or values in the second sense.

The Valuations of a Crusoe

As a first illustration, consider the mental processes by which a man living in isolation, like Robinson Crusoe on his island, values some of his possessions, as, for example, twenty cartridges he was able to save from the wreck together with his gun. These different cartridges may be put to uses as diverse as that of protecting their possessor from the attacks of hostile savages and that of supplying his table with small birds or squirrels. Each has a utility determined by the intensity of the want which it is to satisfy. In all probability Crusoe will decide to put aside a few cartridges with which to repel attack. He will wish to employ the others in the ways that will contribute most to his well-being. If there are deer upon the island it will be foolish for him to shoot his ammunition away at small game. Let us suppose that he makes up his mind to put aside six of the twenty cartridges and to use all the rest for deer shooting. If the herd is tame and he is a good shot, he may reasonably count on killing a deer with each cartridge, so the fourteen shells may represent in his calculations fourteen deer to be killed from time to time as he may require them. These will, as already explained, have an importance to him diminishing as the time to elapse before they are to be consumed is extended.* At the head of the list stands the deer

*Chapter IV., Section 36.

to be killed to furnish a steak for to-morrow's dinner, at the foot the last deer to be shot some three or four months hence. The latter seems of such slight importance at present that Crusoe may well hesitate between saving a shell for it and trying his hand on some of the smaller game on the island. There is thus a series of utilities corresponding to the different cartridges descending from the immense utilities of the cartridges that may save Crusoe's life to the small utility of that which is to supply his next quarter's venison. Under these circumstances what is the value to him of a single cartridge? If it were possible we might expect him to assign different values to the different cartridges, but since they are all exactly alike this would be an absurdity. He must have one valuation that applies indifferently to each one of them. Will this value of a single cartridge be gauged by its ability to preserve his life or its ability to kill a deer for him three months hence?

Value in Use Depends on Marginal Utility

To decide the above question it is only necessary to consider what Crusoe would lose if a cartridge were taken away. Clearly this loss would not put his life in jeopardy, as he would continue as before to save the half-dozen with which to protect himself. As surely it would not deprive him of to-morrow's dinner. As a rational man he will shift it to the point where it will be felt least and forego, since he must forego something, the prospect of the fourteenth deer. It is, therefore, his estimate of the utility of this least useful deer that gauges for him the value of a single cartridge. This is what he loses if a single cartridge is lost; this is what he gains by having twenty cartridges instead of nineteen. It, accordingly, measures the importance or value in use of a cartridge to him. Generalising from this illustration and calling the least utility of a single unit of a commodity under given conditions of supply its marginal utility, we may formulate as a general law the principle that *men value units of commodities in proportion to their marginal utilities*. Value, in the first sense, is thus man's estimate of marginal utility.

Valuations Refer to Units of Commodity

In the above statement it is the value of a single unit of a commodity that is referred to rather than that of the commodity as a whole, and this corresponds to man's habitual mode

of making valuations. When iron is said to be less valuable than gold it is meant that a pound of iron is less important to man than a pound of gold. Every change in the supply of an economic good of course changes its marginal utility and therefore its value. This fact makes the value of a single unit multiplied by the available supply of units quite misleading as an index of total importance. Twenty times the small valuation Crusoe put on a single cartridge would by no means represent the value to him of the twenty cartridges, some of which were as precious as life itself. In the same way, multiplying the slight value of a pound of iron by the number of pounds in existence would give a total representing very inadequately the value of iron to man. If an approximate notion of the importance of the total supply of a commodity is sought, the only way to proceed is to add together the utilities of all of the different units used by man. Such a calculation would show, of course, that such free goods as air and water are more important than even the most costly economic goods.

Valuation of a Crusoe Approximate only

In the above illustration an ability to gauge the utilities of different units of a good is assumed which would rarely be met with in practical life. Even a Crusoe with unlimited leisure for the niceties of economic calculation would have to content himself with comparative rather than absolute estimates of the utilities of his different cartridges. He could say with confidence that the utilities of those necessary to protect his life were greater than of those to supply his table. He could also arrange the latter in a scale of diminishing utility depending on the game to be shot and the remoteness of the time when it was to be needed. His determination of the marginal utility which measures the value of a single unit would be only approximate, however. It would be the utility of a fourteenth deer, not because he can tell just what that utility is, but because he knows that its utility is on the one hand less than that of the thirteenth deer to be shot with the next to the last cartridge, and on the other greater than anything else which he could secure with the fourteenth cartridge. Thus in all calculations of value the determination of marginal utility is comparative rather than absolute.

§ 48. In the preceding section Crusoe's valuation of a com-

Marginal Cost and Value

modity which he could not reproduce upon his island was considered. Much more frequent must have been his valuations of the goods which he could produce. Consider, for example, how he would value the arrows which he must whittle out laboriously as a means to procuring small game. Besides the utility of these arrows there would be in his mind vivid associations connected with the *cost* of making them. In fact until he became quite expert with the bow and could tell quite accurately what an arrow was worth to him in game, he probably valued his arrows in accordance with the labour they cost him. One arrow was worth perhaps an hour's labour. But an hour's labour, from the point of view of the sensations that accompany it, may mean anything from the pleasurable activity of the first hour after a refreshing night's sleep, to the painful drudgery of the last hour of the day when all of the faculties are crying out for repose. According to which of these standards is the importance of an hour's labour gauged? As on inquiring before which utility determines value, so now on inquiring which *disutility* of those which stand for the different hours of work throughout the day determines cost, we must consider what Crusoe would gain if an hour's toil were spared him. Obviously, he would gain most by stopping work an hour earlier. It is the last hour of the day that involves most disagreeable effort or that has the greatest disutility. If an hour is to be cut off from the working day it is from this trying last hour that one would wish to be relieved. It stands in the mind for the *cost* of an hour's work, and in valuing an arrow according to its cost it is to it that Crusoe's thoughts would revert. If we call the disutility of this last hour the *marginal disutility* we may say that *the value of a good, judged from the point of view of cost, is determined by the marginal disutility of the labour time necessary to its production.* Men who, like Robinson Crusoe, produce for themselves the things which they consume, may value their possessions either by reference to their marginal utilities or to the marginal disutilities of the labour involved in their production. It is hardly necessary to add that in practice the determination of the cost of an hour's labour is comparative rather than absolute, just as is the determination of the utility of the resulting good.

Since the disutility of each hour's work is compensated by the utility of the product resulting from it, the tendency of the economic man is to continue his labour until the disutility it entails is just balanced by the utility it affords. Every addition to his labour increases its disutility, every addition to the product, according to the familiar principle, diminishes its utility. At some point disutility will cease to be fully compensated for in utility, and at that point labour must stop if an economic loss is to be averted.

The Relation between Utility and Disutility

§ 49. The contrast between pleasures and sacrifices indicated in the above analysis of value may be illustrated graphically. Let distances along the line OX in the following figures represent either units of commodity or hours of labour, and distances along the perpendicular line OY represent the utilities of these different units of commodity or the disutilities of the hours of labour. Erecting side by side on the line OX and parallel to the line OY narrow parallelograms representing the diminishing utilities of the successive units of commodity resulting from a day's work, we have the following figure:

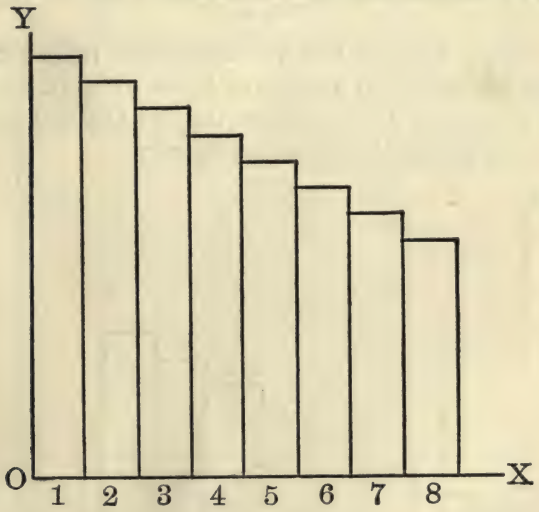


FIG. 1.

The area of all these parallelograms taken together represents the total utility of all of the products of the day's labour,

and it will involve no very serious error to represent this total area as bounded by a curve extending from the Y axis to the parallel line representing the marginal utility produced during the day, as follows:

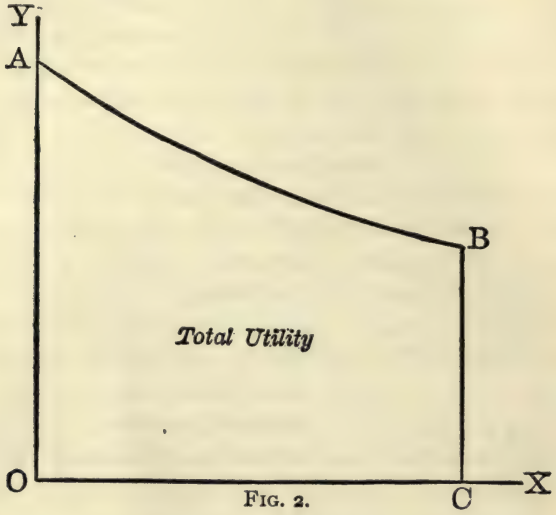


FIG. 2.

In a similar way narrow parallelograms representing the increasing disutilities of successive hours of work during the day may be erected side by side on the line OX and parallel to the line OY, giving the following figure:

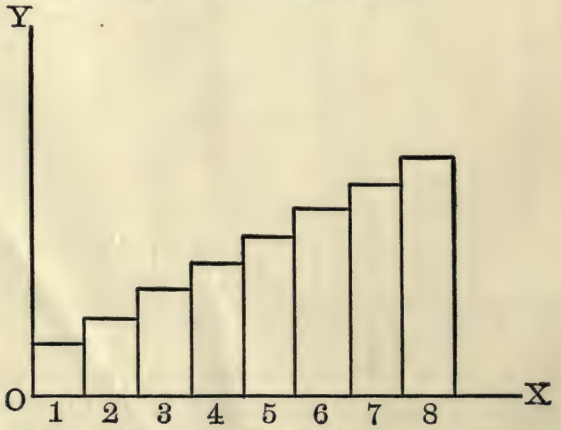


FIG. 3.

As before, this may be simplified by combining the narrow parallelograms into an irregular area bounded by a curve, as in Figure 4:

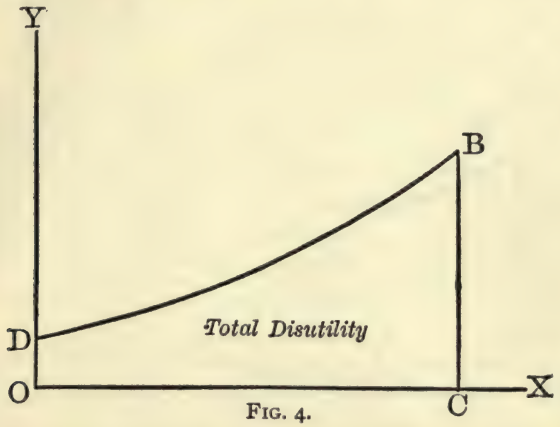


FIG. 4.

If the exact equilibrium between marginal utility and marginal disutility, which is the goal of economic conduct, is realised, the lines BC in Figures 2 and 4 are of the same length, and the figures may be superimposed as follows:

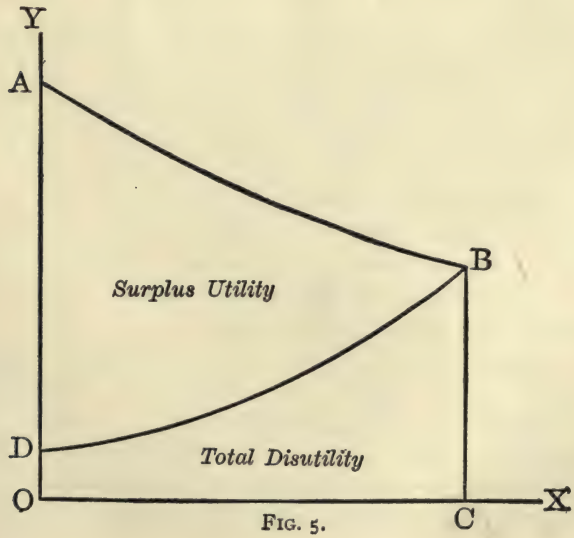


FIG. 5.

Surplus Utility

The " surplus utility " area, A B D, in this figure represents the pleasure an isolated producer derives from the consumption of the fruits of his toil over and above that which compensates him for his sacrifices in production. From the point of view of economics, the existence of this surplus is what makes life worth living.

Marginal Utility and Value in Industrial Society

§ 50. The valuations of a Crusoe are necessarily crude and inaccurate because he has only his own judgment and experience to rely upon. In industrial society the valuations of each individual are supplemented and corrected by the valuations of other individuals. Judgments in regard to the importance or marginal utilities of different goods are collective or social and for this reason are more precise than they can be for men in isolation.

The simplest case of social valuation is presented in connection with a commodity like wheat flour, which serves a variety of uses in every household and the want for which on the part of the normal family is quite elastic. According to the familiar principle of diminishing utility each family's consumption of wheat flour may be arranged in a scale in which the high utilities of the more important units will come first and the low utilities of the less important units last. At the very end will stand the marginal utility of the least important unit consumed. As all families consume numerous units of wheat flour, and as this consumption is carried in most families not to the point of satiety, but only to the point at which the sacrifice involved in paying for additional units is not fully compensated by their utilities, all families value a unit of such flour approximately in proportion to its marginal utility to themselves. In this case all consumers contribute something towards the determination of the social valuation upon which depends the relative importance of a unit of wheat flour in comparison with units of other goods.

Different Goods Valued by Different Classes

Some readers may be inclined to question the correctness of the statement that few families carry their consumption of such a common article as wheat flour to the point of satiety. Certainly in the choice of their own food the rich do not hesitate, under present conditions, to use all the wheat flour in various forms for which they feel the slightest desire. It is

in their purchases for their servants, if anywhere, that their consumption of such an article stops short of the point of satiety. In the case of an even cheaper commodity, like salt, the consumption of perhaps the majority of families in a modern community is unquestionably carried to the point of satiety. Such a commodity is not an object of painstaking economy to the well-to-do, but virtually a free good. Its marginal utility to the average family is a negligible quantity because it is consumed as a matter of course down to the point of satiety. The value of such an article is determined by its marginal utility not to the well-to-do, but to the very poor, to whom even the small price of a bag of salt is a burden, and to those who use it in connection with industrial purposes (*e g.*, in the salt-fish industry, in removing ice from the tracks of street railways, etc.). The value ascribed to it in these connections determines its importance in comparison with other commodities. In the same class as salt are matches and the other cheap articles which are consumed daily by rich and poor alike. Such articles are no longer objects of economy to the well-to-do, who pay for them what market conditions require and would continue to buy the same quantities, that is, all they have any possible use for, even if the prices they had to pay were doubled or trebled. In such cases values, or the comparative importance of units of different goods, are determined by the marginal utilities of single units of such goods, not to each individual consumer, but to consumers generally. Well-to-do consumers exert no influence because they consume all that they wish without reference to what they must pay for such goods. This leaves the task of valuation to consumers who are less well off and to others who use the articles as materials for further production.

Valuation even of Single Goods Complex

A second characteristic of valuations in industrial society rests on the fact that most goods are not simple utilities, but bundles of utilities. A suit of clothes, for example, is not merely a protection from cold and damp. The modern man pays for this utility in his clothes, but he pays much more for the comfort and elegance of the fit, the social distinction attaching to the fineness of the goods, etc. Since valuation consists in ascribing importance to goods in proportion to their

marginal utilities, it involves as many separate steps as there are separate utilities in the goods to be valued. Social valuation differs from that of a Crusoe in that these separate steps are taken by different classes in the community. In the case of clothes the well-to-do class which patronises fashionable tailors takes the warmth and comfort of its garments for granted. These utilities are required also by the less prosperous classes in the ready-made clothes which they buy and are valued in this connection, or even, as regards warmth, by the still poorer classes who buy second-hand clothes. The patrons of fashionable tailors give their thought to deciding as to the marginal utility to them of the style of cut and distinction of finish. Perhaps the best illustration of this point is presented in the valuation of watches of different grades. Nearly everyone wants one fairly accurate pocket timepiece and few have use for more than one. The money equivalent of the marginal utility of this primary quality in a watch is very great to the well-to-do classes, and if the value of this quality were fixed by them it would be represented by many dollars. But the conditions of production are now such that fairly good timekeepers are brought within the reach of all. The marginal utility which determines the value of this quality is therefore that to people in very moderate circumstances. The watches of the well-to-do have in addition to this primary requisite, durability, beauty, power to give social distinction to their owners, extreme accuracy as timekeepers, etc. It is these qualities that the well-to-do value according to their marginal utilities to themselves rather than the primary quality common to all honest watches. The value of a watch is the sum of the values assigned to each one of its qualities by the classes to which these qualities stand as marginal utilities. As a timepiece it is valued by the people who can just afford to have a timepiece, as a durable timepiece it is valued by a higher class in the economic scale, as a durable timepiece encased in silver it is valued by those just able to have silver watches, as a gold-cased watch it is valued by people in still better circumstances, etc. In each instance the value ascribed to the quality added just before is carried over to make a part of the value of the watch to which still another quality has

been added. The value assigned to this last quality is added to the values previously determined to make the value of the whole watch. Thus the value of any good which is made up of a bundle of qualities is the result of a social rather than of an individual calculation of marginal utilities.

Valuation a Social Process

The three illustrations that have been given are typical of the valuations that are made in industrial society. Use value is still man's estimate of marginal utility. Not every man's estimate, however, determines it, because in industrial society the valuations of individuals are influenced by those of other individuals with whom they come in contact. The value of each good depends upon its marginal utility to the group of consumers to whom it is an object of economy. If it is composite its value is the sum of the marginal utilities of its different qualities to the groups to which these qualities are objects of economy. Value in industrial society is thus the result of social valuation. It is not so much man's estimate, as society's estimate of marginal utility.

Marginal Cost and Value in Industrial Society

§ 51. In the economic calculations of a Crusoe, as we have seen, marginal disutility serves quite as readily as marginal utility as a gauge of the value of reproducible goods. Disutility or cost of production includes all of the painful and disagreeable sensations that men experience in connection with production. Each such sensation stands for a sacrifice and unless the results of production fully compensate all those who have made sacrifices it has entailed loss in well-being. So long as attention is confined to the production of a Crusoe the painfulness of prolonged effort may stand by itself for these sacrifices, but for industrial society with its subdivision of functions a more precise analysis is necessary. In addition to the painfulness of effort is another sacrifice which we may describe as postponing consumption or waiting. This is involved more or less in all branches of production. The workman who labours only eight hours a day may not prolong his effort to a point where it is painful, but he is sure before the day is over to feel that he is making a great sacrifice in continuing at his bench when he might be out in the street or at home with his family. Postponing consumption even until the whistle blows is one of his costs of production. But under

present conditions the postponement required is much longer than this. Modern production is indirect or roundabout. Materials, tools, machines, etc., are produced as aids to the production of consumable goods, and on the average a long period of waiting must intervene between the first steps in production and its issue in goods which are ready for consumption. The postponement of consumption which this entails is little appreciated by workmen. They experience the painfulness of effort and they must perforce abstain from consumption during their working hours, but the conditions of their employment, as a rule, insure them their wages by the week or the month irrespective of the stage of completion of the goods which they help to produce; and the conditions of their lives, as a rule, cause them to spend these wages for consumable goods as soon or nearly as soon as they earn them. Postponing consumption so that production may be carried on in a roundabout way is the function of capitalists. It is their wealth which is tied up in the form of the tools, machines, buildings, etc., indispensable to efficient production, and the sacrifices which they make in permitting their incomes to take these forms rather than the form of consumable goods which they could immediately enjoy are as properly included in the costs of production as the sacrifices of workmen.

Complications in Calculation of Social Cost

Nor is the division of the sacrifices connected with production between workmen and capitalists the only complication to be considered in an analysis of costs. Production is cooperative and many men unite their efforts to effect the creation of even the simplest good. It follows that the cost of production of each good is a sum of sacrifices to which many different individuals have contributed. Workmen of different grades and different capitalists, each contributing only a part of the capital used, have a share in it. Moreover, since cost is at bottom a question of individual feeling, its amount depends quite as much on the character and circumstances of the producer as upon the productive act which he performs. As a rule those doing the same sort of work are sufficiently alike to make general statements in regard to the cost of that work admissible, but there are many productive services which are rendered by individuals belonging to quite different classes

and whose costs are accordingly quite different. The most common causes of differences in costs are differences in wealth. Every increase in income brings with it the possibility of increased enjoyment from consumption. The man who has only what he earns from day to day and who earns only enough to supply him with the requisites to decent living has little to tempt him from his work. If his daily round of tasks is painless it involves a minimum of sacrifice, as he has little to turn to outside of the factory. Give the same man an income from investments equal to what he earns by his work and the sacrifice involved in that work is increased. Increase his income from investments until he has enough to live on luxuriously without working at all, and he is more likely than not to find the labour, which before was not felt to be a burden, so irksome and unpleasant that he will give it up entirely. The character of the work has not changed, but the circumstances of the man have, and as a result there is a multiplication of cost. In the higher grades of employment where men with independent means work at the same tasks with men who have no other sources of income, differences in costs are so common as to make general statements about costs hazardous. The most important instance of such differences is in connection with the service of postponing consumption, or waiting, rendered by the capitalist class. This class is composed of all sorts and conditions of men from millionaires to dollar-a-day labourers. Society values the services they render by reference not to the sacrifices that are involved for them individually in the accumulation of capital, but to the amount of capital they accumulate. The wage-earner's meagre savings assist production no more and are no more important dollar for dollar than the inherited millions of the idle rich. Where the same productive services involve different degrees of sacrifice for different producers, it is the sacrifice to marginal producers, or those whose sacrifice is greatest, that must be counted in the cost of production. This must be compensated by the utility of the product or it will not be incurred any more than will an uncompensated last hour's labour be performed by an isolated producer. The calculation of the cost of production in industrial society is

thus a very complex process, and any balancing of marginal cost or disutility against marginal utility must be roundabout and difficult of analysis.

The above discussion of the relation between cost and value in industrial society is intended rather to suggest than to solve difficulties. It touches upon some of the most intricate problems of advanced economics and cannot be pursued further without the fuller knowledge of industrial relations which the following chapters attempt to supply. On the basis of this knowledge the topic is taken up again in Chapter XVI. and some conclusions are suggested which, it is hoped, may encourage a more profound study of the subject.

Valuation of Complementary Goods

§ 52. A special case of valuation of the greatest importance is that of complementary goods. Many wants are satisfied not by one good but by a complementary group of goods, the absence of any element in which would be fatal to the result. In such a case the whole group is valued as a unit in accordance with the principles just explained; and the valuation of each good in the group is the result of a separate calculation.

An illustration is furnished by Crusoe's gun and cartridges. Without the cartridges the gun is valueless, without the gun the cartridges are of no use. In this case if Crusoe wishes to put a value on either he must ascribe to it all of the importance that belongs to both. In industrial society complementary goods have, as a rule, independent uses to which they may be applied. In the case of a gun and cartridges, the latter, at least, or their component parts, may be turned to other purposes. This opportunity for independent use furnishes grounds for independent valuation and makes it possible to calculate by a process of subtraction the value of the good which is useful only in the complementary group. The value of the whole group is measured by its marginal utility. The values of the elements in the group which serve other purposes are determined by their marginal utilities in these independent uses. The difference between the value of the whole group and the sum of these independent values is properly ascribed to the element or elements which are of use only in the group. If the group is made up of several elements, the

process of valuation may be exceedingly complex in practice, but the considerations involved are readily understood.

Factors in Production are Complementary Goods

The most familiar complementary groups that men have occasion to value are those made up of producers' goods. As production is now carried on every step in the productive process involves the co-operation of several complementary factors. The value of each group of factors is derived from that of the consumable goods which it is helping to produce. The latter satisfy wants directly and may be valued by reference to the intensities of these wants. Groups of producers' goods do not satisfy wants directly and owe the importance or value ascribed to them to the part they play in the production of consumable goods. Although a derived value, the valuation of complementary groups of producers' goods obeys the same principles that apply to groups of consumable goods. The value of the whole group is calculated by reference to the value of the consumable goods to result from it. The values of different elements in the group are determined as far as possible by reference to the independent uses to which they may be put. The value of the whole less the values assigned independently to the elements for which there are other uses is the value to be ascribed to the element or elements that have no independent uses. In practice these calculations are often very complex and could hardly be made at all but for the intermediation of money, the common medium in which they are all expressed by the business community.

Values in Use and Values in Exchange

§ 53. As already explained, the calculations in reference to marginal utilities upon which values in use depend are comparative rather than absolute. They attain precision only when there are a number of different goods to be valued and the consumer is given a choice between additional units of one or the other of them. In such cases marginal utilities must be carefully balanced against each other if an unwise selection is to be avoided. The typical consumer of industrial society is an individual with numerous and varied wants having access to markets in which numerous and varied goods capable of satisfying these wants are offered for sale, but limited in his means so that many of his wants must go unsatisfied. Successive units of each particular good offered for sale obey the

law of diminishing utility. In order to get the largest return from the expenditure of his limited means the consumer must consider the law of variety. He must not buy an additional unit of one good when a unit of some other good which may be had at the same price has greater utility. In general he should carry his purchases of units of different goods which he desires down to the point at which the returns in utility for his last units of expenditure are approximately the same all along the line. Only under these conditions is he getting the largest possible return in utility for his expenditures. Economists sometimes speak of the marginal utilities of all of the goods which a person consumes as determining the location of his *margin of consumption.* This margin should be as even as possible to insure the maximum return in satisfaction to the consumer with limited means.

Values in Exchange Expressed as Prices

The balancing against each other of the marginal utilities of units of different goods is one of the factors which determine the ratios at which such units exchange for each other, or exchange values. The practice of exchanging goods for money is now so universal that exchange values are habitually written with a sum of money as an intermediate term. Business men do not compare commodities by saying that so much of one exchanges for so much of the other, but by noting their prices. They do not say, for example, that a bushel of wheat is the equivalent of two bushels of corn, but that the price of wheat is one dollar a bushel and of corn fifty cents. In conformity with this practice the discussion of the circumstances determining exchange values which follows is couched in terms of prices.

Exchange Values Cannot Increase or Decrease as a whole

The first principle in reference to exchange values that must be emphasised is that as ratios they can neither rise nor fall as a whole. Values in use, determined as they are by marginal utilities, may increase, but values in exchange cannot. A change in the exchange value of a particular good always and necessarily involves complementary changes in the exchange values of other goods. For example, if the exchange value of a bushel of wheat increases from x to $2x$, the exchange value of x has diminished from one bushel of wheat to one-half a bushel of wheat. Exchange values as a whole cannot be said

to have changed at all. It is equally important to note that the exchange value of money, in which prices are expressed, may increase or decrease like the exchange value of any other individual good. When the exchange value of money increases prices fall, when it decreases prices rise. As prices are the barometer which guides business men in all their transactions it is of the greatest importance that that commodity should be selected to serve as money which is least likely to fluctuate in its exchange value.

The Value of Money

§ 54. The value of a unit of money or of a dollar, like the value of anything else, is man's estimate of its marginal utility. This is identical with the marginal utilities of the goods a dollar will buy. Each man has a certain money income to expend and a certain scale of wants to satisfy. His effort is to get the largest possible return for his outlay. To accomplish this he must consider the prices of things quite as much as their utilities. His first dollar should go for that combination of goods having the greatest utility, his second for a somewhat less needed combination, and so on, each dollar adding somewhat less to his store of utilities than its predecessor. The marginal utilities of the goods purchased with his last available dollar measure the value of a dollar. It is these goods that the additional dollar adds to his store; take the dollar away and it is these goods that he will forego. They measure the importance or value of a single dollar in his scale of living.

Influences Affecting It

Few people, even among those who regularly spend their entire incomes in the satisfaction of their wants, estimate the value of a dollar as rigidly as the above analysis implies, and yet everyone has as a result of his business experience a pretty accurate notion of the value of the monetary unit. If parents sometimes complain that their children are without such a conception, it is a proof simply that conditions have changed since they were young and that the value of a dollar to their children is actually less than to themselves. In the minds of educated men the value of a dollar includes not merely the utilities of consumable goods, but leisure for enjoyment, social esteem and influence, the perpetuation of the family name and family traditions, everything, in short, which command over

dollars may secure and which seems to them desirable. It is probably true also that some people worship dollars in a quite irrational way for their own sake, though misers who have no ulterior motive beyond hoarding up money are more common in fiction than in real life.

For convenience of analysis it will be assumed in the following chapters that the exchange value of money, that is, the quantity of commodities generally which it can command in the markets of the country, is invariable. This is not quite true in practice, as is fully explained in Chapter XIX., but it is so nearly true over short periods of time that no serious error is involved in the assumption.

The Determination of Prices

§ 55. The circumstances that at last analysis determine the money prices of goods and services are exceedingly complex. To understand them it is necessary to comprehend every phenomenon of economic life. Nevertheless the actual process by which money prices are fixed is comparatively simple. Buyers and sellers come together each with definite notions as to what the prices should be, and the prices finally fixed are the result of their bargaining.

Buyers' Calculations

On the side of buyers the following calculations are commonly made: (1) They decide in regard to the values in use of the different goods offered for sale, and if they think of getting more than a single unit of each good they consider the values of additional units. In this connection, as already explained, marginal utilities are decisive. (2) They decide as to the prices that they are willing to pay. As regards most of the goods purchased there is no hesitation. Experience has taught that at the prices at which they may ordinarily be purchased they afford the greatest return in satisfaction to be derived from the expenditure necessary to such purchase. Thus the normal family purchases flour, sugar, and the other staples that enter into the consumption of every household as a matter of course. Deliberation begins only after these necessaries are secured, and the question is how to get the largest return for the sum that remains to be expended. Buyers vary greatly in the intelligence they show in disposing of their surplus incomes. Some expend them regularly for goods which they do not really want, but which attract by their novelty. Less

impulsive buyers have in mind several different goods which they would like to have. These are arranged in their minds in a rough scale which enables them to decide promptly which of two goods they would prefer at the same price, or whether at different prices the dearer good is worth, in their scale of consumption, the difference. In all of these calculations the value they ascribe to the monetary unit is quite as important in directing their purchases as the values they ascribe to the goods bought.

Sellers' Calculations

The calculations of sellers are usually somewhat more accurate than those of buyers. (1) They know pretty closely how much the goods they have to sell have cost them in money. This we will refer to in future as the *expense of production*. Since they are in business for profit, sellers look upon the expense of producing a unit of commodity as a minimum price, less than which they cannot afford to take except under unusual circumstances. (2) They have accurate information in regard to the current prices of goods and on the basis of this knowledge decide what prices they ought to obtain. At this point sellers are influenced by standards made for them by market and other social conditions, just as buyers are influenced to a certain extent by the standards of others in calculating the values in use of different goods.

Four Possible Cases: One Buyer and One Seller

There are four possible situations in which buyers and sellers may come together. The simplest is that in which one buyer bargains with one seller to secure a commodity which that seller alone offers for sale. The buyer has made up his mind what price he will pay rather than not get the commodity, but as an economic man he wishes to pay as much less as is consistent with his sense of fair dealing. On the seller's side is a definite idea of the lowest price he can afford to accept, but his business interest calls for the highest price he can get. If the buyer's maximum price does not exceed the seller's minimum price it is obvious that no exchange can take place. If it does, then the market price must lie somewhere between these limits. Just where depends upon the relative skill of the two parties in bargaining.

Several Buyers and One Seller

A second and more common situation is that in which several buyers bargain with one seller who has a monopoly of the

good which all the buyers want. This situation admits of a variety of accompanying circumstances: (1) The monopolist seller may have only one unit of the desired good, as is often the case with dealers in antiques. In such a case the buyer who is prepared to pay the highest price will get the coveted object at a price between that offered by the next highest bidder and his own maximum price unless, indeed, the latter is less than the dealer is willing to accept. How this works out in practice is so frequently illustrated at auctions that there is no need to enlarge upon it. (2) The monopolist seller may have several units of the desired good and these may be incapable of reproduction. In this case he may pursue the plan of getting as much as he can for each unit as it is sold, as is usual at auctions, or of marking each with the highest price which he thinks he can get for all of them, as is usual with "one-price" dealers in antiques. If he pursues the first course the result will be similar to that in the first case. Each successive unit will go to the competitor who was just outbid by the more eager buyer who got the one before. In this case the prices received for different units will vary widely and if all are sold at one time will show a tendency to decline. If the seller pursues the latter course and uses good judgment in marking his wares he will fix on the price which is just equal to the maximum which the buyer whose purchase is necessary to the sale of the entire supply is willing to pay, unless, of course, this is below the price which he is himself willing to accept, when some of the supply must remain on his hands. (3) The monopolist seller may have several units of the desired good and may be in a position to produce as many more units as he considers it profitable to put upon the market. This is the common case of monopoly and is so important that special chapters are devoted to it. At this point it will suffice to submit the fairly obvious propositions that anywhere below the limit fixed by the maximum price which the most eager buyer is willing to pay, the monopolist may fix the price by regulating the supply, and that, in so regulating the supply, he will try to fix the price that will afford him the largest monopoly profit over and above his expenses of production.

A third situation is presented when one buyer bargains with

several competing sellers. Perhaps the most common case of this kind is when a single city family goes in the summer to live in a country district where all other families produce for themselves all of the milk, butter, eggs, chickens, etc., which they require. Under such circumstances, if competition is permitted to work out its full effects, the new family may get the country products it requires for the lowest prices the most eager sellers competent to supply all its needs are willing to accept. More frequently competition is restrained by custom and the buyer has a choice between goods of different quality rather than between different prices for the same goods. This third case of "buyers' monopoly" has resulted at times from the formation of the trusts discussed in Chapter XXV. When all of the manufacturers who use a particular kind of raw material combine, producers of the raw material are placed at a great disadvantage in bargaining. They may be forced to accept a price which is so low as to drive all but the most capable of them out of business.

One Buyer and Several Sellers

§ 56. The last and most common situation is that in which there are several buyers and several sellers, between whom more or less active competition and bargaining are carried on. In highly organised industrial centres this competition shows itself more clearly on the side of sellers than upon that of buyers, and in fact in most branches of trade sellers have adopted the plan of marking prices, leaving it to buyers to accept them or reject them as they see fit. This arrangement does not dispense with buyers' competition as an active force in the determination of prices, since this is one of the chief factors that sellers consider in deciding what they shall ask for their wares, but it makes the whole process more complicated.

Two-sided Competition

In order to bring out the various influences at work under conditions of two-sided competition, we will examine the case of an auction sale in which an auctioneer has identical goods, bicycles we will say, belonging to different sellers and is instructed to sell as many of them as he can at the highest price he can get, each seller naming the minimum price which he is willing to accept for his wheel. Assume that there are six wheels and that the sellers' minimum prices are $20, $22, $24,

An Illustration

$25, $27, and $30, respectively. Among the many would-be buyers at the auction the six who are prepared to pay the highest prices for wheels have in mind as their maximum prices $40, $35, $32, $30, $28, and $25, respectively. Each buyer understands the conditions of the sale and, as one wheel is like another to him, will be inclined to hold back in his bidding with a view to buying at a low price. All six of them are willing to pay $25, but at this price only three of the wheels can be purchased, and fear of not getting any wheel at all will lead one of them to bid $26. At this price five would be willing to buy, but only four wheels are salable. One buyer must bid more or lose his chance to buy, so $27 will be offered. At this price five wheels may be sold to the five buyers willing to take them, but if the auctioneer is properly mindful of the interests of his customers he will try to get still more. If he succeeds in forcing the bid up to $28 there will still be five buyers for the five wheels he is authorised to sell. Any price between $27 and $28 will effect the sale of his five wheels, and since the sixth buyer will pay only $25, while the sixth seller will not take less than $30, only five wheels can change hands under the given conditions. The price between $27 and $28 is therefore the one most satisfactory to buyers and sellers as a whole, and the one which competition, restrained by the self-interest of competitors, tends to establish.

The Actual Practice

Artificial though the above illustration is, it comes close to representing the forces which determine competitive prices generally. Rival sellers do not entrust their goods to an auctioneer, but they act jointly very much as he acted in the assumed case. Each has a minimum price determined by his expenses of production. All wish the largest number of sales at the highest attainable price. Their tendency as individuals is to put up the price. As competitors they tend to lower it to enlarge the volume of their sales. If competition is active between a number of sellers with varying expenses of production, the price is likely to be fixed at a point which affords profits to several, just pays the expenses of production of others, and drives others out of business because it does not cover their expenses of production. The part which buyers play in bringing about this result is to seek constantly for

the cheapest market. Their competition is rarely actually excited, as was assumed at the bicycle auction, but its potential force is indicated to sellers by the rapidity with which their goods are sold at the prices which they fix. The more attentive buyers are to their interests in getting goods at the lowest prices, the more likely are sellers to meet price-reductions promptly, so that there will be substantially one price for each particular good at any one time throughout the whole market. The price will be lower than many buyers stood willing to pay, it will just about suit the ideas of others, while still others will find it too high.

The One-price System

In assuming that two-sided competition will tend to establish one uniform price instead of a variety of prices for identical units of the goods sold, we are simply stating a fact of common observation in highly organised markets. Experience has taught both buyers and sellers the advantage of agreeing upon the one price at which a maximum number of sales may be effected, and all the machinery of competition, published price lists, clearly marked prices on goods offered for sale, etc., is designed to bring this about. Only in communities in a backward condition industrially, as in Italy for example, do any large number of sellers at retail continue to make the determination of the price at which each good shall be sold a matter for a special bargain. The time that is wasted in consequence in useless higgling is convincing proof of the superiority of the one-price system. In the wholesale trade special bargains between the wholesale dealer and his influential customers are more common and skill in bargaining is an important requisite to success. The price limits within which such bargaining is confined are, however, narrow, and the wholesaler is always restrained from making too great concessions by the fear that he may alienate his other customers.

Generalising on what has been said, we may conclude that two-sided competition and bargaining between buyers and sellers tend to establish one price or a narrow range of prices for each good and that this corresponds to the money equivalent of the marginal utility of the good to the buyer who is just induced to buy and to the expense of production of the seller whose supply is necessary along with the supplies of sellers

who produce more cheaply to satisfy the demand of the market.

Market Prices

§ 57. A study of the four possible modes of price formation indicates that the money equivalents of the marginal utilities of the goods offered for sale to those whom we may style the marginal buyers, that is, buyers who are just induced to buy, always have an important influence upon prices. In case there is only a limited number of units of the good in existence or its production is controlled by a monopoly, these marginal utilities, which are themselves influenced by the number of units offered for sale, or by supply, determine the price. In the case of freely reproducible goods the money equivalents of their marginal utilities to marginal buyers are one of the determinants of prices, while the expenses of production to marginal sellers are the other. In this case no very definite conclusion can be reached in regard to prices until the circumstances determining the normal expenses of production have been considered.

Normal Prices

In the foregoing analysis market prices have alone been referred to. In connection with most goods there is behind the fluctuating market price a normal price to which the former tends to conform. This is because the conditions of production are more stable than the market conditions under which goods are bought and sold, and serve constantly to recall prices from the more or less violent fluctuations of the market. For the present, normal prices may be defined simply as the prices about which market prices tend to fluctuate. In the case of freely reproducible goods normal prices correspond to the normal expenses of production of representative firms. The normal prices of goods produced under conditions of monopoly are, on the other hand, the money prices which are calculated, in the long run, to afford the largest profit to the producer or combination of producers which enjoys the monopoly. In both cases the term, "normal," designates the price which economic forces tend to establish under the given conditions. The justification and practical usefulness of the conception will be made to appear in subsequent chapters.

Summary

§ 58. This chapter has attempted to explain how the values and prices of goods are determined. It has been shown that

an isolated individual tends to value his possessions in proportion to their marginal utilities and that the latter depend partly upon his scale of wants and partly upon his supply of units of the good valued. A substitute basis for valuation in cases where the goods are produced as well as used was found in marginal cost, or disutility. The rational ordering of life causes the marginal utility, which is one measure of value, to just equal and offset the marginal disutility, which is the other. Only when this is the case, as was pointed out, can an economic equilibrium be realised. In industrial society complications are encountered. Although still referred to marginal utility, value was found to result from the joint calculations of different groups of people rather than from the calculations of single individuals. It was finally characterised as society's estimate of marginal utility. The complications on the side of cost were found to be even more serious. The costs incurred as production is carried on in society are divided up among a number of co-operating producers. No one producer, consequently, is able to judge what the total cost of production is. Even if the cost could be readily measured there is no direct opportunity to compare it with utility, as men usually produce for others rather than for themselves. Valuations based on marginal costs apply, therefore, to different goods from those that are valued by reference to their marginal utilities. Finally, it was shown that the costs of production are borne by men in very different circumstances, so that very different costs enter into the production of identical goods and services. As these have the same values, costs to men at the margin are alone influential in their determination. No attempt was made to clear up these difficulties, but it was intimated that in spite of them cost does influence value even in industrial society. The discussion of value concluded with some considerations bearing on the valuation of complementary goods. Attention was then directed to the nature of price and to the circumstances determining the value of money. The four possible situations under which prices may be determined were described and discussed and finally the distinction between market and normal prices was explained.

Conclusion

As has been indicated at every point in this chapter, one

factor in the determination of the values and prices of goods is the available supply. In general, in accordance with the law of demand, an increase in the supply of a good means a fall in its marginal utility, or value in use, and a corresponding fall in its price. Conversely a decrease in supply means a rise in value and price. Ordinarily the amount of the supply of a good depends upon the conditions of production. In a somewhat less direct but no less vital way it depends also upon the conditions of distribution. It is for this reason that the treatment of value and price is left incomplete in this chapter until the subjects of production and distribution have been considered.

REFERENCES FOR COLLATERAL READING

* *Marshall*, Principles of Economics, Book V.; **Pierson*, Principles of Economics, Part I., Chap. I.; *Clark*, Philosophy of Wealth, Chaps. V. and VI.; *Smart*, Introduction to the Theory of Value; **Böhm-Bawerk*, Positive Theory of Capital, Book III.

CHAPTER VI

PRODUCTION: LAND AND NATURAL FORCES

Production Defined

§ 59. Production has already been defined as the creation of utilities. That man cannot create matter is a familiar truth. All that he can do is to rearrange particles of matter so as to create *form* utilities; or move goods from one part of the world to another so as to create *place* utilities; or preserve goods from one period to another so as to create *time* utilities; or, finally, transfer goods from the ownership of one individual to that of another so as to create *possession* utilities. Any activity which contributes to the creation of utilities in either of these ways is production.

Manufacturing and Trading as Productive as Agriculture

A school of French economists of the eighteenth century, the Physiocrats, gave currency to the belief that agriculture is productive in a special and peculiar sense. They even went so far as to characterise manufacturing and mercantile pursuits as *sterile* or unproductive. Adam Smith took vigorous exception to the latter view, but he, too, speaks of nature as "labouring along with man" in farming, and implies, erroneously, that man has little outside help in his other occupations. Completer knowledge of the real nature of production has emancipated most minds from these misconceptions. They reappear from time to time, however, in criticisms of the activity of merchants, who are said to create nothing, but to live, like parasites, by buying things for less and selling them for more than they are worth. The obvious reply to such attacks is that merchants create time, place, and possession utilities and that human well-being depends as much upon these as upon form utilities. Convincing proof of the value of the services of merchants is furnished to city people when they go to live in the country in the summer and have to depend for the goods they require upon a distant and ill-stocked country store. The growing prevalence among country people of the

practice of coming to town to do their shopping indicates, on the other hand, their practical appreciation of what the merchant does for the community. If there is just ground for complaint, it is not because merchants fail to render useful service, but because the organisation of wholesale and retail trade is less economical than it might be. In this department of business the results of unregulated competition are less clearly beneficial than in, perhaps, any other.

Factors in Production: Nature and Man

§ 60. As already implied, there are two essential factors in all productive processes: nature and man. Nature figures in production as an aggregate of materials and blind forces. Acting in conformity with invariable laws, she destroys as readily as she creates. Moreover, her productive services are always gratuitous to him who has the intelligence to command them. Man, on the contrary, appears as a being with conscious purpose. He also destroys, not ruthlessly, however, as nature seems to do, but in order to satisfy his wants. In production man is the directing, active agent, nature the obedient, passive agency. Man marshals the materials and productive forces which nature supplies in the ways that experience has taught him to be best, and he alone enjoys the fruits of productive enterprise.

Capital

Man and nature are the primary factors in production; secondary or derived from them is capital, *the products of past industry used as aids to further production.* After what has been said of the revolution which followed the introduction of power machinery and other forms of capital there is little need to emphasise the importance of this third factor in production. To capital is chiefly due the efficiency of contemporary productive methods, as contrasted with those of one hundred and fifty years ago, and also the division of the working population into employers and employees. These truths are so familiar to everyone that it is not so much the importance of capital as the fact that it is itself dependent upon man that requires emphasis.

The Productiveness of Land

§ 61. As the term is commonly used in economics, "land" designates not only the surface of the earth and the materials above and beneath it, but also bodies of water and what they contain. The principal ways in which land, in this sense, assists in production may be enumerated as follows: (1) It

affords *support* for man and the buildings, etc., he erects upon it; (2) its *extension* permits the movement of men and goods from place to place; (3) its *geographical features,* mountains, valleys, rivers, bays, etc., aid in many ways; (4) it supplies the *materials,* mineral, vegetable, and animal, from which all commodities are made; (5) each portion of it enjoys its share of summer's heat and winter's cold, air, sunshine, and rain, without which no form of life could long continue on the earth. Properly speaking some of these endowments of land, such as heat and sunlight, are forces rather than materials. The principal other natural forces which aid in production, as at present carried on, are the force of gravity, the vital forces that cause the growth of plants and animals, the expansive force of steam, and electrical force.

Progress in Production

Land and natural forces have been available for human use for one hundred thousand years or more, but only in recent times has man begun to appreciate and utilise them at all fully. His early discoveries of fire and its uses, of methods of navigating by water and of the metals, and his first domestication of animals and cultivation of plants, followed each other at long intervals and were the results, there is reason to suppose, of happy accident rather than of deliberate study and experiment. Only in the last two centuries has systematic progress been made in the task of understanding nature and directing her forces toward human ends. The results already achieved in analysing materials into their elements and gauging accurately their importance for different uses, in generating and controlling steam and electricity, and in finding new employments for these and other natural forces, seem to justify extremely optimistic anticipations in regard to the future of the race upon the earth. They have served in large measure to shift the attention of economists from the problems of production, which seem in process of such happy solution, to the problems of distribution, which become more rather than less complex as general wealth increases. There is the more excuse for this shifting of interest because different phases of production are beginning to be dealt with in special treatises. "Economic geography" is a description of the part which land and natural forces play in production.

"Economic geology" treats more especially of rocks and minerals in relation to human well-being. Similarly, treatises on agriculture, on mining, and on different kinds of manufacturing, describe the technique of modern production in its different branches. It remains for a treatise on economics merely to emphasise the more general aspects of the part that nature plays in production.

Different Characteristics of Different Pieces of Land

§ 62. It is a familiar fact that different areas of land are unequally fitted to aid production in the ways that have been described. Most obvious are differences in geographical features. There is but one New York Harbour on the American Continent, and its superiority in all essential respects to other harbours causes every square foot adjacent to it to be eagerly utilised in the promotion of a vast commerce. Similarly, there is but one source of water power like that supplied at Niagara Falls by the Niagara River and there are no other fresh water courses comparable with the Great Lakes and the Mississippi and its tributaries. Though less unique other geographical features are important and influence in large measure the forms of industrial activity that flourish in the regions in which they are found. Differences in mineral resources are quite as marked. Geological changes, most of which antedated the appearance of man upon the earth, deposited beds of iron ore in one locality, strata of coal in another, veins of gold and silver, copper and lead in still others, and in others layers of barren rock. The influence which these mineral deposits exert on the kinds of industry that are to be carried on in different sections and on their prosperity is too familiar to be dwelt upon. Differences in soils, climate, rainfall, and the other conditions affecting agriculture are equally in evidence and, as was indicated in the chapter on the Industrial Expansion of the United States, play their part in shaping a nation's industries.

Although most of the characteristics of different pieces of land are, economically speaking, unalterable, others admit of considerable modification. However admirable a harbour may be as fashioned by nature it can nearly always be improved by man. Important as were the Great Lakes as a natural water course their usefulness has been much increased by the con-

struction of the Erie, Welland, and Sault Ste. Marie canals. Even more marked are the changes which man may make in preparing soils for agricultural use. Besides clearing land from forests and from stones and draining off surplus water, he can often change comparatively poor to very good soil by means of fertilisers. As the English economist, Professor Marshall, has suggested, the various qualities that fit a piece of land for the cultivation of a particular crop or series of crops may be compared to the links of a chain, and as the strength of a chain depends upon that of its weakest link, so the fertility of a piece of land depends upon the quality in respect to which it is most deficient. In the same way that the strength of a chain may sometimes be increased many fold by repairing an imperfect link, so land may often be raised to a much higher plane in the scale of fertility, if its one serious defect is remedied.

Old and New Countries Contrasted

In new countries where land is abundant and labour and capital are scarce and dear, the tendency is to rely mainly on the natural qualities of different soils and to make little use of fertilisers. As a country becomes more populous and land is in greater demand, fertilisers are more freely used and the tendency is for each piece of land to be supplied artificially with the qualities in which nature has left it deficient. In this way continuous cultivation tends to obliterate the differences which originally distinguished different soils in the same general region and raise them towards one uniform standard of excellence. This makes it difficult if not impossible in an old country to determine to what extent the fertile properties of a given piece of land are due to nature and to what extent to man. In the United States it is probably still true of agricultural land that it owes the principal characteristics that fit it for production to nature. This is even more the case, of course, with its mineral and forest lands.

Differences in Expenses of Production Due to Differences in Land

§ 63. If attention be confined to some particular product, such as iron, coal, wheat, corn, or wool, and a study be made of the conditions under which it is produced in a country like the United States, it will be found that some of the supply comes from areas where the natural conditions are very favourable to such production, that other portions come from areas

where the natural conditions are less favourable, and still others from areas so situated that the production is barely profitable. To illustrate by reference to iron: some of the ore is of such richness and is so easily mined that each year's output affords a profit to mine owners and operators so large that in a short time it amounts to a princely fortune. Other ore is less rich and mined under greater difficulties, but still pays a handsome profit over all the expenses of its production. Still other ore barely repays the expense entailed in putting it on the market. It may be, and often is, the case in mining that still other ore is taken out of the ground and sold at an actual loss to those engaged in the business, the loss being made good for a time out of the capital of such business men in the hope that the ore will improve with depth, or that it will command a higher price, or that something will occur to make the enterprise a success. In addition to this poorest ore mined there are known to be vast bodies of ore of even inferior grades which might be mined and would be mined if market conditions were to change so as to make it profitable. In iron mining and other branches of mining there are thus different producers incurring quite different expenses of production, ranging from those whose expenses are low to those whose expenses are barely covered or even not quite covered by the price. The more fortunate receive in the current price a considerable margin over their expenses of production, which is to be explained, economically, as due to the superior natural resources which they exploit.

Farming

A similar situation is found in farming and may be illustrated by reference to the cultivation of wheat. The expense entailed in producing wheat on the bonanza wheat farms of the Dakotas, even including the transportation charge to the distant market, is very considerably less than the expense of producing wheat for the same market in Michigan, owing to differences in the favourableness of soil and climate in the two sections. Some wheat farmers realise regularly year after year a considerable margin above the expenses of production in the current price, others realise a smaller margin, others barely pay expenses, while, in some years, still others incur a loss and have cause to regret that they did not allow their land to lie

idle. In addition to the land used for wheat there is still other land that is even poorer for this purpose, but that could and would be used to swell the country's wheat crop in case market conditions changed so as to make this profitable. In wheat farming and other branches of farming there are thus considerable differences in the expenses of production incurred by different farmers, and since all obtain approximately the same prices for the same products in the central market, allowing of course for variations in quality, these differences cause some to reap large profits, some to reap smaller profits, some to just meet their expenses, and some, perhaps, actually to lose on the year's industry. Here again superior natural advantages are the source of the higher profits which some realise.

Manufacturing

An exactly similar situation is encountered in branches of manufacturing which utilise water power, the supply of which is limited. Those who control superior sources of water power obtain their power more cheaply than their competitors using inferior power. So long as all manufacturers sell their products for the same market prices those controlling the superior powers must reap an extra profit traceable to this natural superiority.

Conclusion

From these typical illustrations it appears that land and natural forces assist different producers for the same market unequally. Since they all receive the same prices and since these must be high enough to cover the expenses of production of the men who produce at the greatest disadvantage but whose supplies are necessary to satisfy the demand of the market, those producing under more favourable conditions must reap a profit due to these conditions. This special form of profit, which in the aggregate represents an important share of the wealth annually produced, is known in economics as *rent* and will receive further consideration in the chapter on that topic.

The Law of Diminishing Returns

§ 64. But, it may be asked, if nature assists production so unequally in different localities, why is not the whole supply of each particular commodity produced in that one spot which is best adapted for the purpose? The mere statement of this question suggests the answer. All of the iron ore needed in the United States is not produced from the richest iron mine,

because that mine does not contain enough ore to satisfy a hundredth part of the demand. All of the wheat required is not produced from that one acre best suited to wheat culture, because it could not produce a millionth part of the wheat needed. Equally inadequate is the water power even of Niagara to generate the force needed to keep all the manufacturing machinery in the country in motion. Thus if all the ore in the best mine, if all the wheat the best acre could be made to produce, and if all the power of Niagara were made available in a single year, it would still be necessary to have recourse to many other mines, acres, and sources of water power to satisfy the demand for these things.

Statement of Law

In practice, as is well known, it does not pay to extract all the ore from even the richest mine at too rapid a rate, nor to cultivate too carefully even the best acre of land, nor to utilise too fully even the finest water power. In each of these cases the producers encounter what is known in economics as the *law of diminishing returns*. Briefly stated this law is that *after a certain point has been passed in the cultivation of an acre of land or the exploitation of a mine, increased applications of labour and capital yield less than proportionate returns in product,* it being understood, of course, that no important change is made in the method of cultivation or exploitation. To illustrate by reference to wheat farming: A given acre of land may be cultivated in numberless different ways, each more elaborate than the preceding and each giving rise in a normal year to a somewhat larger crop. It may be ploughed once, twice, three, or even four times, and each ploughing will add somewhat to its preparedness to receive the seed. It may be harrowed correspondingly. The use of fertilisers familiar in the region offers a wide range of possible variation, each having some perceptible effect on the year's crop. While the crop is maturing a great number of different precautions may be taken to protect it from the ravages of birds, insects, storms, etc. It may be irrigated, or great pains may be taken to drain off quickly an excess of rainfall. It may even, as is said to have been tried on the Island of Guernsey, be covered with glass at the period when it is most liable to injury. In these and hundreds of other ways labour and capital may be applied without

exhausting the productive capabilities of the land. Some of these possible improvements in the method of cultivation beyond the roughest scratching over of the soil may and probably will yield more than proportionate returns in the wheat crop, but after a certain point has been passed all experience confirms the law that further improvements afford less than proportionate returns. Unless this were true, indeed, there would be little occasion for dividing up rural families and sending some of the sons to take up new land. Every additional hand on the old farm would add his proportion to the joint produce and a farm of a hundred acres would support a score of families as well as one.

The Extensive and Intensive Margins of Cultivation

To give precision to the statement of the law of diminishing returns it is customary to distinguish between the "extensive" and the "intensive" margins of cultivation. If, for example, the demand for wheat increases so as to induce the production of a larger crop, the additional supply may come from either or both of two sources. Wheat farmers in the settled portions of the country may make their farming more intensive, that is, apply more labour and capital to the cultivation of each acre and in this way add to their crops. Others may be induced to take up new land and prepare it hastily for "extensive farming." If both results follow the prospect of a somewhat higher price for wheat, as they would if farmers were always alert to their own interests and ready to adapt their methods to changing market conditions, there will be two situations in which the expenses of producing wheat are just covered by the price. The wheat grown on the poorest land hastily ploughed and planted, or on "the extensive margin of cultivation" will barely repay the expenses of production. So also will the additional wheat raised by the application of additional labour and capital on the "intensive margin of cultivation." The producer at either margin may in such a case be properly described as the marginal producer whose expenses of production are just covered by the price of the product. The fact that his *additional* wheat just about pays for itself will not, of course, prevent the farmer at the intensive margin from realising a rent on that wheat which he continues to produce at smaller proportionate expense.

In the mining industry there will not be the same tendency to hasten the exploitation of each mine up to the point at which the price just covers the expense of getting out the most expensive ore, because the bed of ore is, even while still under ground, a store of wealth to the mine owner. Uusally, after he has demonstrated the value of the deposit he will prefer to mine it in the most economical way without much attention to price fluctuations. In mining, therefore, it is at the extensive margin of exploitation, that is, in connection with the poorest mines, rather than at the intensive margin, that the expenses of production that influence price are to be found.

Other Differences in Lands

§ 65. In the preceding sections the natural differences between different pieces of land have been discussed as though they alone determined the importance of land to man. That this is far from being the case is illustrated on every hand. Each year sees large tracts of land in the United States enhanced in value simply because of changes in market conditions or improvements in the means of transporting products to the market. To some extent the growth of markets is itself determined by natural conditions, but it will be simpler to regard it as the result of social changes. A few illustrations will indicate how important such social changes are in determining the value of land and the amount of the extra profit or rent which favourably situated land affords.

An Illustration

Contrast, for example, the iron and coal deposits of China with those of the United States. Well-informed geologists assert that, from the point of view of natural richness, those of China are scarcely if at all inferior to those of America. From every other point of view the latter have been and will be for many years the superior. This is because the tool and machine using habits of Americans, their steel railroads, steel cars, steel steamships, etc., represent an enormous demand for these commodities and make the exploitation of such deposits exceedingly profitable. There are indications that China is about to enter upon an industrial revolution similar to that through which Japan has passed in the last generation and that as time goes on changed social conditions will cause coal and iron to be appreciated there somewhat as they have been for a century in the Western World. Such a revolution will, of course,

cause an immense increase in the value of the now practically worthless iron and coal deposits of the country and enable the fortunate owners of the richer of those deposits to reap large profits or " rents " from their exploitation.

Suburban and Country Plots of Land Contrasted

Next, contrast an acre of agricultural land on the outskirts of a large city with an equally fertile acre many miles from any centre of population. The first point to be observed is the different uses to which the two pieces of land will be put. The back-country acre will be sown with some staple crop, such as wheat, corn, or cotton, since it alone will repay the expenses of transportation to the distant market. To it labour and capital will be applied probably only up to the point where the tendency to diminishing returns shows itself, because, in the given situation it will pay better to apply additional labour and capital to new land than to press cultivation beyond this point. The suburban acre, on the other hand, will be sown with the most delicate and perishable vegetables in demand in a city market. Labour and capital in the form of fertilisers, etc., will be applied far beyond the point of diminishing returns because the quantity of land near the city which can be utilised for truck farming is exceedingly limited and city prices for green vegetables are so high that very intensive cultivation is profitable. From the point of view of profit the back-country farmer may be on the very margin of extensive cultivation, that is, his expenses, increased largely by the freight he must pay to get his crop to market, may just about equal the price he receives for his crop. The suburban farmer, the native fertility of whose land was assumed to be the same, is sure to reap a high rent from his business. The final " doses " of labour and capital he applies to his land may be just paid for in the price he gets for the additional produce that results from them. It is to his interest to continue his cultivation so long as it is remunerative. But all earlier applications of labour and capital will be more than covered by the price received for what they added to the product. As a whole his acre will show at the end of the year a high rent over expenses, ascribable to its nearness to the market or to social rather than to natural conditions.

A still more striking contrast is presented by a comparison of city real estate, priced by the front foot, with agricultural land,

City and Country Plots of Land Contrasted

priced by the acre. Next to man's need for food and clothing comes his need for a shelter or for a home. The former may be produced at great distances and brought to him from day to day in the small quantities that he requires. The latter must be available in its entirety all the time, and it must not be so far away from his place of business as to make his daily trips back and forth unduly irksome. This accounts for the fact that when land begins to be thought of for building purposes its importance is at once greatly enhanced in human estimation. The more concentrated the activities of a city and the larger its population, the greater will be the demand for each piece of land favourably situated for building. Thus as a place changes from a country four-corners to a village, then to a town, and then to a city, the values of building sites within its limits tend to rise, although with many fluctuations as regards particular quarters, and the rents which their utilisation affords to increase correspondingly. The invention of the bicycle, the trolley-car, and other conveniences for passing quickly and easily from one's place of business to one's home may check this tendency somewhat, and if these improvements follow each other rapidly may check it entirely or set up a counter tendency, but during the last quarter of a century the increase in the value of city real estate and of the rents that such property affords has been a phenomenon common to all civilised countries. How far this may go in particular instances is illustrated by the fact that a lot sold in the heart of London recently for a price which would make an acre of unimproved land in that locality worth $2,300,000. In some sections of New York City land is equally valuable. In these cases also the increased value and correspondingly enlarged annual return are ascribable to social rather than natural conditions.

Conclusion

Generalising on these illustrations, we may conclude that differences in situation in respect to markets and other social conditions are quite as influential as natural differences in determining the importance of different pieces of land and the rents they afford. When these social conditions are created by the forethought, enterprise, and labour of some particular individual or group of individuals, as when, for example, a suburb

is deliberately planned and brought into being by a syndicate of real-estate operators, we have a case similar to that presented by the modification of the character of the land by drainage or fertilisation, in which it is very hard to distinguish man's purposive share in the result from the share of an unconsciously evolving community. These difficulties receive fuller consideration in the chapters on Distribution.

Summary

§ 66. In this chapter attention has been called to the natural differences between different pieces of land, to the law of diminishing returns which restrains men from trying to derive more than a certain product from each piece of land, and to the special profit or rent which arises in consequence of the fact that lands of different qualities are employed to supply the same commodities in the same markets. It has just been shown that differences in situation in relation to markets are equally potent in determining rents.

The Rent of Land

In discussing rents it has been assumed that the man who uses the land is also the land owner. In European countries and to an increasing extent in the United States this is not the case. Land ownership is coming to be more and more divorced from land utilisation and as a result the extra profit ascribable to the superiority of particular pieces of land is clearly distinguishable from other forms of profit going to the cultivator or occupier. It must be paid as "rent" to the land owner, or the latter will prefer to cultivate or occupy the land capable of affording such profit himself. In future this share of wealth will always be referred to as "rent" to distinguish it from other shares to which the designation "profits" more properly belongs.

REFERENCES FOR COLLATERAL READING

* *Marshall*, Principles of Economics, Book IV., Chaps. I., II., and III.; *Walker*, Political Economy, Part II., Chap. I., and * Land and Its Rent; *Nicholson*, Principles of Political Economy, Vol. I., Book I., Chaps. II. and IV.

CHAPTER VII

PRODUCTION: LABOUR AND CAPITAL

Labour as a Factor in Production

§ 67. Of co-equal importance with nature as a factor in production is man. His contribution to the productive result depends partly upon his capacity as an individual and partly upon the way in which his efforts are applied, that is, whether to direct or to capitalistic precesses of production, or whether independently or in co-operation with the organised efforts of others. Each one of these circumstances merits separate consideration.

Qualities Influencing Productiveness of Labourer

The principal qualities which determine an individual's capacity as a producer are the following: (1) health, (2) physical strength and endurance, (3) intelligence, (4) judgment, (5) ambition, (6) energy, (7) perseverance, (8) imagination, (9) mechanical ingenuity, and (10) technical knowledge. The importance of health and physical strength, especially to those doing manual work, is obvious. Intelligence and judgment are important adjuncts to the man with pick and shovel; they are indispensable to men in the higher grades of industry. Ambition, energy, and perseverance are qualities that characterise all the world's greatest men, and without which other qualities are of little value. Imagination is important because to it are traceable all great industrial inventions and discoveries. Mechanical ingenuity, though less important to the mass of men than formerly, when fewer tasks were performed by automatic machinery, is still a valuable quality. Technical knowledge, on the other hand, gains each year in importance as the ways of doing things that are found to be most efficient increase in complexity. It is evident that the importance of these different qualities depends upon the kind of work to be done and that industrial progress tends to lessen the importance of some while it increases that of others.

§ 68. The above qualities, like other human characteristics,

Qualities are either Inherited or Acquired

are either inherited or acquired. Whatever their origin in special cases the same general conditions, acting either on successive generations or on living men, account for their presence. Having in mind especially the influences affecting the Germanic race, to which a large proportion of the most advanced peoples of the present day belong (Americans, English, Germans, etc.), we may say a few words in regard to each quality.

Health and Strength

The conditions influencing health and strength are well understood. Fresh air and exercise, good food, adequate protection from dampness and sudden changes in temperature, and the avoidance of all kinds of excesses, are the principal requisites. Of these good food is perhaps the most important. The human body resembles a machine, and the amount of work it can do depends very largely on the quality and quantity of the fuel, that is, the food, with which it is supplied. Up to the time of the industrial revolution Germanic peoples enjoyed many of the above conditions and the physique of the race was consequently well developed. The introduction of machinery has served to concentrate the populations of advanced countries to an ever-increasing extent in cities and to substitute for open-air work, work indoors in shops and factories. There has been reason to fear that this might permanently impair the health and vigour of those very peoples which have led in the race for industrial ascendency, not only because of its direct effect, but also because the monotony of such labour fosters dissipation. To counteract these evil tendencies vigorous measures have been resorted to, notably in England and Germany, where sanitation and factory acts have been passed by the government and where coffee-houses, workingmen's clubs, etc., as substitutes for the saloon, have been created through the efforts of private individuals. A great deal of attention is being given, especially in those countries which maintain large standing armies, to the question of determining what diets are best for people doing different kinds of work, and model kitchens are being organised in the poorer quarters of cities to teach people to appreciate nutritious and properly prepared foods. Efforts to improve the tenement houses in which the populations of the larger cities live are also being put forth and with some success. Finally mention

should be made of the public baths, the playgrounds for children, and the open-air gymnasiums which are being erected in those cities in Europe and America which are most progressive in caring for their inhabitants. As is shown by mortality statistics, these efforts are beginning to bear fruit in the improved health of present-day city populations, but much yet remains to be done for both city and country people. There is no form of philanthropic activity which is more certain to benefit mankind than that designed to improve the conditions under which the mass of men live and work. Restored health and vigour are blessings in themselves, but equally important is the fact that they make for more efficient production and enable their possessors not only to hold what they have gained, but to steadily add to their advantages through their increased earning power. Every improvement that can be made in home and factory surroundings without undermining the independence and self-respect of the population is thus a certain means of "helping people to help themselves."

Intelligence and Judgment

The development of intelligence and judgment depends largely upon education, and here too undoubted progress has been made. In place of the formal and traditional methods that have prevailed in the schools, methods having direct reference to the organic development of children are beginning to be introduced. Moreover, the proportion of children who go to school is on the increase, and the expenditures that modern states make for public education are growing. Nevertheless there is still much to criticise in current educational practices and in the short-sightedness of democratic states in not contributing even more liberally to the support of education. In it lies the hope of the future, since through its agency the standards of each generation of children are elevated. These higher standards may be passed on to the next generation of children to be raised still further in the schools, and so the process may be repeated with steady progress as its necessary consequence. If improving educational advantages are added to steadily improving home suroundings, the advance of the race cannot fail to be rapid.

Ambition, energy, and perseverance depend partly upon a people's range of wants in comparison with the means to their

satisfaction, and partly on the probability which the situation presents that effort and enterprise will be crowned with success. These qualities are conspicuously lacking among a people which has developed few wants and whose means of livelihood are so limited by natural conditions that even the greatest efforts cannot result in a large command over economic goods. They are as conspicuously present among a people with numerous and varied wants to which are open a great variety of promising ways of acquiring wealth. This contrast is well illustrated by the difference between the peasantry of Europe and the plain people of America. Poverty of resources and the restrictions of a class organisation of society tend to stifle the ambitions of the former as markedly as wealth of resources and absence of rigid class barriers tend to stimulate those of the latter. The most desirable situation for the fostering of these qualities is evidently one in which different scales of living prevail side by side and in which at the same time a fair degree of equality of opportunity is preserved. The danger in a country like the United States is that an aristocracy of wealth may grow up to monopolise the easiest means for acquiring further wealth and to hold the mass of the people down to working for mere wages. Under such circumstances different scales of living would foster not ambition but merely envy and bitterness in the minds of those who have little prospect of improving their condition. This danger must be kept in view in connection with the question of the limitations that it may be desirable to impose upon monopolies and the rights of property.

Ambition, Energy, and Perseverance

The conditions favourable to the growth of imagination, mechanical ingenuity, and technical knowledge call for no extended discussion. Imagination is still little understood. It seems to be fostered by variety of surroundings and experiences, and by attention to unsolved problems which contain an element of mystery. Perhaps the most that is to be hoped for from present educational methods is that they will permit some part of the imagination which seems to be natural to childhood and youth to be carried on into manhood. Manual training, to which more and more attention is being given in the United States and abroad, is, of course, directly productive of

Imagination, Ingenuity, and Knowledge

mechanical ingenuity. Perhaps the greatest progress made in connection with any of the enumerated qualities is to be found in the field of technical knowledge. Technical schools, courses in colleges and universities, correspondence and evening classes, and journals unite to bring the knowledge necessary to efficient production within the reach of all, aspiring enough to desire it. This progress has gone so far already that there seems to be more danger that technical education will be begun too early than that too little attention will be given to it. In addition to these admirable facilities for disseminating knowledge already acquired, more and more attention is being devoted to the acquisition of new knowledge. Every State in the United States has at least one privately or publicly endowed university intended to encourage scientific research. To supplement these are the national institutions dedicated exclusively to research work, the Smithsonian, and the recently founded Carnegie Institute. Moreover, many individuals are devoting their lives and their fortunes to experiments directed towards discovering improved methods of satisfying human wants. Taking all of these things into account we may predict with confidence continued progress in the technique of production.

Evolution and Production

Co-operating with the conditions favourable to the development of individual capacity that have been enumerated are the silent forces of evolution. Although interfered with by the growth of benevolent instincts and agencies which intervene to preserve many of the unfit from destruction, these forces aid powerfully in the process by which each people surrounded by a favourable environment becomes fitted to make fullest use of that environment. Weak and incapable lines of heredity are cut off in each generation and the field is left to the stronger and more capable. In prosperous communities the weeding-out process affects not merely the underdeveloped and underfed, but the overdeveloped and overfed. Dissipation is as common a cause of premature death and failure to continue the line of heredity as starvation. Evolution thus operates not only to enable each succeeding generation to get a larger return for its efforts, but to educate it to a wiser use of its material advantages. The surviving type of successful man is less and less

self-indulgent and more and more philanthropic in his instincts and habits as generation follows generation. From this it results that progress itself causes more and more attention to be devoted to the conditions leading to progress and hence tends to be a cumulative process.

Capitalistic Production

§ 69. Given a certain standard of individual capacity on the part of a labouring population, its productiveness depends next upon the extent to which its methods are capitalistic. By capitalistic production is meant production which attains its ends, not by the direct and immediate creation of consumable goods, but indirectly through the creation first of tools, machines, and other material aids to production and the creation subsequently with the help of these capital goods, of the consumable goods desired. Capitalistic production is thus roundabout instead of direct, and involves a longer interval of time between its inception and its completion. It can be adopted only by men who are willing to forego immediate gratifications and permit their incomes to assume the intermediate form of capital goods so that in the end a larger output of consumable goods may result. Such conduct involves *abstinence* from present consumption, *saving* income or productive powers instead of using them to minister to immediate consumption, and *waiting* until the longer productive process shall be completed. "Abstinence," as the term is here employed, denotes simply not doing something that ordinarily it would be pleasant to do. It need not necessarily involve any element of pain or sacrifice, because the purpose accomplished through it may be even pleasanter than the things abstained from. Usually, however, abstaining from present consumption does involve some sacrifice for the psychological reason already explained.*

Advantages of Capitalistic Production

The superiority of capitalistic over direct production and the reasons for it will appear clearly from a few illustrations. One of the most urgent needs of Crusoe on his sea-girt island was fresh water. Having found a spring he might satisfy this need by scooping up the water with his hands. This would be direct production. Or he might make a cup of bark in which he could dip out, by stooping once, all of the water he could

* Chapter IV., Section 36.

drink. Such a cup would be a capital good and the process would be capitalistic production. It would multiply largely the return resulting from the effort of stooping. Or he might fashion a larger vessel in addition to his cup with which he could dip out at one time all of the water he required for a whole day. This would be more highly capitalistic production. Its advantage would be that it would enable him to stock his hut with all the water he required by making but one trip a day to the spring. Or, finally, if the spring happened to be at a higher level than his hut, he might construct a trough of hollowed logs capable of conducting the water from its source to his very door. This would be much more highly capitalistic production than any of the other processes, but its return would be correspondingly larger. The force of gravity would now relieve Crusoe entirely from the task of carrying the water, and all that he would need to do to secure an abundant supply would be to keep his trough in repair.

These illustrations are typical of the advantages of capitalistic production. It enables man to apply his own efforts more effectively, as when he uses tools or implements, or to command the assistance of natural forces which without the aid of capital goods would be beyond his control. The forces of gravity, steam, and electricity can be utilised effectively only in connection with the forms of capital appropriate to them. For these reasons a given expenditure of effort in capitalistic production is usually more fruitful of results than the same expenditure in direct production, and the more highly capitalistic or prolonged the process the larger, generally, the return in consumable goods for each unit of effort expended.

Capital Goods and Capital

§ 70. Business men are in the habit of speaking not of "capital goods," but of "capital." By this they mean sometimes capital goods themselves, but more often these goods measured in terms of money. Capital goods wear out and need to be replaced. Individually they come into being, are used, and are then discarded. But capital, as the business man understands it, is more permanent. It is the complex of capital goods used in connection with each branch of production measured in terms of money. To the extent that prices are stable and that the efficiency of production is maintained the

money equivalent of this complex of capital goods changes little if at all. Each year's inventory shows about the same aggregate, although each year the particular capital goods embraced in the inventory are different from those of the year before.

Fixed and Circulating Capital Goods

§ 71. In comparing different methods of capitalistic production two factors must be considered: the average amount of capital required for each process and the average time that elapses in each case before this capital is completely used up or converted into consumable goods. For example, compare two branches of manufacturing in one of which the entire equipment of capital goods has to be renewed on an average once a year, while in the other the equipment requires renewal only once every two years. If each factory requires exactly the same amount of capital from day to day the first will require for continuous production twice as large a replacement fund as the second because its capital goods wear out twice as fast. Economists give precision to the contrast indicated in the illustration by distinguishing between *fixed* and *circulating* capital goods. Fixed goods are those which endure for some little time without replacement. Circulating goods are those, like coal, which are destroyed in a single use. It is obvious that these are relative terms and that capital goods present all possible gradations of fixity.

Specialised and Free Capital Goods

Capital goods differ also in the extent to which they are *specialised* or *free*, or in their *mobility*. Raw materials such as coal, iron, etc., are as a rule very mobile. They may be devoted at will to any one of a dozen different productive uses. On the other hand, machines, buildings, etc., are highly specialised and either cannot be diverted to any other use than that for which they were originally designed or not without a great loss in value. Permanent improvements in land are of course quite immobile and an unwise creation of this type of capital goods may result in complete loss without possibility of recovery.

Money

Some writers assert that of all forms of capital, money is the most mobile, having in mind the ease with which it may be exchanged for other goods. This important quality is not mobility, but *exchangeability*. From the point of view of

mobility, money is a highly specialised capital good. This is particularly true of paper money, which becomes practically valueless when deprived of its monetary quality.

Fixed Capital Increasing

With the industrial progress of the world the proportion of fixed and specialised capital goods shows a tendency to increase. This results in lessened mobility for capital goods as a whole and is one of the causes of the prolonged periods of depression which invariably follow business crises under present conditions.

Capital Subject to Law of Diminishing Returns

§ 72. In discussing the part which land and natural forces play in production, it was pointed out that they yield diminished returns to human industry after a certain point has been passed in their utilisation. A similar law of diminishing returns applies to capital goods and to the workmen who use them. This law appears in its greatest simplicity as regards capital goods in the case of a Crusoe so abundantly supplied with land of the best quality that he has no experience of lessened returns from that quarter. Assume him to be cast upon his island with a very limited stock of capital goods, but with full knowledge of the superiority of capitalistic production and with sufficient resolution to provide himself with other capital goods as rapidly as his situation permits. He will have in mind a list of the capital goods which he requires, arranged probably in the order of their importance. A cup, a pail, a bow and some arrows, a boat, etc., will be some of the things he will plan to make. For a time the capital goods he fashions will be of so nearly equal importance in aiding him to produce consumable goods that he will be conscious of no tendency to diminishing returns. After a while, however, when his rough equipment of capital goods is fairly complete, he will have to weigh in his mind the advantages of adding duplicate goods of some kinds or of substituting better-made goods for others already in his possession. At this point his expenditure of effort in making capital goods and his patience in waiting until these efforts bear fruit in consumable products will be less richly rewarded than before. One bow added enormously to his ability to provide himself with food, a second of a little different kind will add also to the ease and certainty with which he can secure game, but in a lessened degree. A third bow

could perhaps be used advantageously, but the added game ascribable to it would probably barely reward the effort involved in its production. So long as there is but one labourer to use all the capital goods that may be created, and so long as that labourer makes no discoveries or inventions of capital goods superior to those he is already using, diminishing returns is evidently the law of capitalistic production.

But as respects the use of capital goods, the position of a whole industrial society is not materially different from that of an individual. If the working population is stationary while its equipment of tools, machinery, etc., is being constantly added to, and if discovery and invention do not cause new and better implements to supersede those in use so rapidly as to counteract the tendency, in industrial society also, after a certain point has been reached, additional capital goods will assist production less proportionately than the capital goods which they supplement. In other words capital as a whole will be subject to the law of diminishing returns.

Also Labour

That the same law applies to workmen may be illustrated by modifying the above picture by thinking of the equipment of capital goods as fixed while successive additions are made to the working population on the island. The first newcomers may make possible a better distribution of the supply of capital and produce as much per man as Crusoe was able to before their arrival. If barehanded workmen continue to arrive, however, it must soon be necessary to set them to work so ill-equipped with tools and implements that they will produce less and less per man as their number increases. Thus the productiveness of workmen whose supply of capital is limited tends to diminish as their number is increased beyond a certain point, just as does the productiveness of capital, the supply of which is increasing, when there is only a limited working population to utilise it.

That diminishing returns must after a time result from either situation is really a corollary from the principle that the most effective co-operation between labour and capital is only realised when they stand in the right quantitative relation to each other. If after this relation has been established capital goods increase while the number of workmen remains fixed, or work-

men increase while capital goods remain unchanged, the co-operation between them must be rendered less effective, or, what is the same thing, diminishing returns must be accepted by the factor that is increasing. If both factors increase together there will be no occasion for any reduction in the return so long as new land equal in quality to the old is available. It is therefore not the increase in the factor subject to diminishing returns alone that causes the diminution, but that increase coupled with the lack of response on the part of the other factor.

Methods of Accumulating Capital

§ 73. The only method by which Crusoe could acquire new capital was by applying his own efforts to its creation. He must *produce* it as well as *save* it. In industrial society the production of capital goods is effected like the production of consumable goods usually through the agency of business managers who produce for the market. The "saving" which inspires this production is performed by a different set of people conveniently designated as capitalists. A few illustrations will serve to show how the savings of capitalists help to bring capital goods into existence:

Saving and Investing

I. A farmer who wishes to enlarge his barn saves part of the money he receives for his crop and uses it to buy lumber and to hire masons and carpenters to make the desired improvement. In this case by buying lumber he encourages the production of more lumber, or virtually hires lumbermen, sawmill hands, etc., to produce this kind of capital good, just as he subsequently hires men to convert it into a new wing to his barn. He turns over to others his command over society's wealth, which they use to satisfy their wants. In return he receives the addition to his barn, a new capital good added to society's productive equipment.

Borrowing and Investing

II. Very often the farmer who wants a larger barn is unwilling or unable to save enough to pay for it himself. If he is a man of enterprise he is not likely to be deterred by this circumstance from taking steps to obtain it. Having a valuable farm to pledge as security, he is in a favourable position to borrow. He may apply to a well-to-do neighbour who has saved the money needed out of his income and is looking for a chance to invest it. In this case the neighbour does the saving and

thereby makes possible the building of the addition; the farmer decides how the saved income shall be invested in a concrete form of capital, taking all the risk of the venture and insuring the lender against loss by pledging or mortgaging his farm. The actual creation of the addition results as before from the labour of woodchoppers, mill hands, and carpenters, who are paid for their services as they render them.

Borrowing from Banks

III. Instead of applying to a neighbour the modern farmer who wishes to borrow money is more likely to apply to a bank, an institution which receives on deposit individual savings and lends them together with its own capital and its credit to customers. In this third and most typical case, the saving or income is performed by the depositors of the bank, who know nothing about the ultimate disposition of their savings. The lending is performed by trained men who give all their time and thought to this business, the bank officers, and the investing or conversion of the purchasing power into capital goods is done as before by the farmer.

Borrowing not Always for Investment

In these ways and in others too similar to require separate description the accumulation of capital goods results from saving. Not all saving, however, leads to an increase of capital. The deposits in a bank may be loaned to someone who wishes to spend them for consumable goods. In such a case, what depositors abstain from spending, borrowers spend, and the community's stock of capital remains as it was before. In order to cause an increase in capital, saving must be supplemented by investing, unless, indeed, it takes the form of hoarding, which is unusual in modern communities.

Capital Goods not Money Saved

In the above illustrations "money" or "income" is spoken of as the thing "saved." Money is, of course, merely the medium by means of which control over one kind of wealth which the individual does not want is exchanged for control over another kind which he does want. What is really saved in every case is the capital goods themselves which are brought into existence directly or indirectly by the investment. Thus in the examples the addition to the barn is saved and added to society's capital equipment.

Often investment is thought of, especially in cities, as buying real estate, or stocks or bonds. Such purchases are invest-

Buying Stocks and Bonds Does not Add to Capital

ments from the point of view of the individual, but to the community as a whole they represent simply transfers of ownership over capital goods already in existence. The investment proper appears when the purchasing power exchanged for stocks or bonds is used for the development of some new or for the better equipment of some old enterprise. Just as money deposited in a bank may never lead to any real addition to capital, so money invested in stocks or bonds may finally be spent for consumable goods and leave no trace behind.

Kinds of Capital Goods

§ 74. Capital goods may be defined as products of past industry used as means not to the direct satisfaction of wants (consumption goods), but to further production. They include all the *intermediate products* which figure in roundabout or capitalistic production. The principal kinds of capital goods are:

(1) Permanent improvements in the physical environment, in the form of drainage systems, canal excavations, tunnels, roadbeds, etc.

(2) Buildings of all kinds except those serving no industrial purpose.

(3) The rolling stock of railways, vehicles, etc., not used merely for pleasure.

(4) Tools and machinery.

(5) Farm and draft animals.

(6) Seed, raw materials, and partially finished goods in process of production.

(7) Finished goods in the hands of dealers.

(8) Money.

Land and Capital

In connection with "permanent improvements" a difficulty is encountered that has caused no little confusion. Land as a gift of nature is not regarded as a capital good. But permanent improvements in land become for practical purposes portions of the land itself. Thus in old countries most land is partly a gift of nature and partly a capital good and it is often impossible to distinguish between the two. A simple way out of this difficulty is to describe land also as a capital good, and this is done by the business community and by some economists. To the writer simplicity so secured seems bought at too high a price, since it involves a disregard of the distinction, be-

lieved to be fundamental, between man's part in production and nature's part. A better plan seems to be to accept the difficulty as inevitable and to recognise that in distinguishing between what is and what is not capital, economists have the same sort of task as confronts biologists in distinguishing between what is animal and what is vegetable. As regards most things classification in both instances is easy.

Acquired Skill is not Capital

Along the same line is the temptation to include as capital goods, skill and training that have been acquired as the results of "investments in education." From one point of view such acquired aptitudes for production should be included. Their origin, so far as motives are concerned, is similar to that of other capital goods. Moreover, like other capital goods they are aids to further production. Yet economists generally decide against such inclusion because they deem it important to distinguish sharply between man and the material aids he uses in production. On the whole it seems best to adhere, in the present treatise, to this plan of classification.

Dealers' Stocks are Capital

Objection is sometimes made to the inclusion of "finished goods in the hands of dealers" in the list of capital goods. But this follows logically from the principle (which has already been defended) that trade is a branch of production. An important requisite to the efficiency of production is a regular and continuous ministering to the wants of consumers. Most economic goods must be forthcoming regularly from day to day or at particular periods in order to possess high utility. To secure this result the business organisation of society must provide, first, for the carrying over of stocks of goods, such as agricultural products that mature only periodically but that are needed continuously, and, second, for the carrying of sufficient supplies of goods that mature continuously, to insure a continuous stream of commodities from producers to consumers, no matter how far they may be removed from each other. Thus wheat production is efficient in proportion to the care with which the crop harvested during the summer months is handled so as to meet the community's need for bread during the entire year. All of the conveniences, such as elevators, warehouses, etc., which contribute to this end, as well as the stored wheat itself, are capital goods. In the same way if it

takes, on the average, thirty days to transport bananas from the growers in Central America to consumers in American cities it is indispensable to the efficient production of this fruit that a stock equal at least to thirty days' consumption be kept regularly in transit either in the warehouses of shippers, on the ocean, in the warehouses of wholesale dealers, or ripening in the shops of retail venders. Such a stock is a part of the community's capital goods.

Money

The last kind of capital good enumerated, "money," is too important to be dismissed with a few words and is therefore treated in separate chapters.

Progress in Capitalistic Production: The Middle Ages

§ 75. The development of capitalistic production to anything like its present proportions is of comparatively recent date. During the Middle Ages the capital goods used were so few and crude that each producer supplied himself with his needed equipment without great difficulty. Instead of commanding interest the accumulated wealth of the rich had often to be stored and a fee paid for its safe-keeping.

The Growth of Commerce

As commerce developed there was an increasing demand for capital in the form of vessels and goods with which to stock them, and merchants, like Antonio in *The Merchant of Venice,* were often able to turn other people's accumulations to very profitable account. The use of tools and machinery in agriculture and manufacturing made little advance, however, before the period of the industrial revolution. During all these centuries the chief service of saving with a view to the future was in connection with the preservation of flocks and herds and the husbanding of the food supply and seed from one harvest to the next and from years of abundance to the lean years that were sure sooner or later to follow.

Influence of the Industrial Revolution

Since the beginning of the last century capitalistic production has advanced in the Western World by leaps and bounds. In place of simple hand tools and foot and horse-power machines, complex machines to be driven by water, steam, or electrical power have come into use. These have been multiplied so rapidly that the average capital equipment of the modern producer is easily a hundredfold larger than that of the mediæval workman. Enormous investments have been made also in improved transportation facilities and in buildings for

the safe housing of machinery, operatives, and goods. As a result of this progress in capitalistic production and of the contemporaneous discovery and invention of new and more efficient kinds of capital goods, the productiveness of human industry has been immensely increased. A large part of this increased return goes as interest to those who allow their wealth to remain in the form of capital in preference to converting it into consumable goods for the gratification of their immediate wants. The part that remains as the wages of labour has also grown, however, so all classes have derived material benefit from the change.

Summary

§ 76. In this chapter the circumstances determining individual capacity and the nature and results of capitalistic production have been considered. It has been shown that the latter involves "abstinence," "saving," and "waiting," in addition to the mere mechanical production of capital goods, and it has been implied that these are the grounds for the payment of interest to those who embark their wealth in industrial enterprises. The different kinds of capital goods have been distinguished, and finally the progress of capitalistic production has been traced and its advantages indicated.

Conclusion

Since capitalistic processes add so largely to the productiveness of industry, the development of thrift, or a willingness to forego present gratifications for the sake of the future, is an important condition to further progress. What is most needed is not a general development of thrift, for many individuals are already inclined to carry saving to the point of parsimony, but a development of it, or of the prudence and forethought on which it depends, among the working classes. Accustomed for generations to live from hand to mouth, wage-earners are only just beginning to appreciate how much the accumulation of property may contribute to their well-being. Its principal advantage for them, individually, is that it will serve to carry them over periods of unemployment without that loss in efficiency that is the most pitiful result of enforced idleness for men who have nothing to fall back upon. For the whole community the aggregate savings of a thrifty labouring population would cause a great increase in its equipment of capital goods, and a corresponding improvement in its industrial

processes. On both accounts the development of providence and forethought among the masses is earnestly to be desired. Equally important are improvements in the conditions of wage-earners which will encourage them to save by rendering spending up to the full limit of their incomes less imperatively necessary.

REFERENCES FOR COLLATERAL READING

Walker, Political Economy, Part II., Chaps. II. and III.; **Marshall*, Principles of Economics, Book IV., Chaps. VII., VIII., and IX.; **Böhm-Bawerk*, The Positive Theory of Capital, Books I. and II.; **Clark*, The Distribution of Wealth, Chaps. IX., X., and XI.; *Nicholson*, Principles of Political Economy, Vol. I., Book I., Chaps. V. and VI.; **Pierson*, Principles of Economics, Vol. I., Part I., Chap. IV.

CHAPTER VIII

PRODUCTION: CO-OPERATION AND BUSINESS ORGANISATION

Co-operation in Labour

§ 77. Important as is an individual's capacity as a condition determining his productive efficiency, the way in which he co-operates with his fellows is even more essential. Alone, a man can do little more than keep himself alive even in the most favourable environment. Working in co-operation with others he so multiplies the results of his toil that he may, if other conditions be favourable, provide himself with comforts and luxuries as well as with necessaries.

Varieties of Co-operation

Three varieties of co-operation may be distinguished: (1) Simple co-operation, that is, the simple working together of several for the attainment of a common purpose, as when several unite to move a stone or raise a mast. (2) The division of employments, by which each gives his entire time to some one branch of production, such as farming, boat-building, or shoemaking, and exchanges his products for the products of others. This is commonly described as the *simple division of labour.* It is an indirect form of co-operation in that in realising it men work together not at the same but at different tasks, expecting to share their unlike products by means of exchange. (3) The subdivision of tasks in each employment, as when in shoemaking one makes the soles, another the uppers, another combines them, etc. This may be conveniently designated as the *complex division of labour* and is the characteristic of the factory system. As co-operation it also is indirect.

Dependence of Co-operation on Development of Markets

Progress in indirect co-operation, or the division of labour, depends upon the development of markets and other facilities for exchange. For example, a man cannot be a shoemaker unless shoes are in demand by people willing and able to pay for them. Much less can a shoe factory be organised, with its elaborate subdivision of tasks and large output, unless shoes

can be sold at remunerative prices. From this it may be inferred that every improvement tending to widen the market for goods is favourable to a further extension of the division of labour. The truth of this conclusion is abundantly illustrated by the history of the last one hundred years.

The Influence of Improved Transportation Facilities

Before the era of steam railways and steam vessels the market for most products was necessarily restricted to limited areas near the source of supply because of the high cost of transportation. Each region had to produce for itself its bulkier food articles, building materials, and implements, and could import from or export to other regions only those products which were light and costly. Under these circumstances the division of labour could be little practised. Country districts afforded employment to a blacksmith, a carpenter, and a few other specialists. A few cities grew up where those goods which could pay the relatively high costs of transportation were manufactured. But the majority of the people were forced by the conditions to give their attention to agriculture as the only means by which they could earn a living. Steam and, more recently, electrical transportation have changed this situation. At present the cost of carriage offers no serious obstacle to the shipment of even cheap and bulky articles, such as wheat and coal, half-way round the world. For most goods, in place of a merely local market, there are now general markets ranging in magnitude from that afforded by a large city to that of the whole world. Perishable goods, services, and goods for which there is only a local demand, must still be produced on a small scale to satisfy local requirements, but the proportion of these goods to the whole mass of products is constantly diminishing. Even fruit and fresh meat have ceased to be perishable in the sense that they will not bear transportation to distant markets. Accompanying this widening of markets there has been a concentration of special industries in special localities and of business management in fewer and fewer hands. In this way full advantage has been taken of opportunities for extending the division of labour, with the result that the volume of goods produced has enormously increased.

§ 78. Capacity to co-operate depends upon certain well-

defined qualities as much as does individual capacity to produce. Of these qualities the principal are: (1) honesty, (2) steadiness, (3) a spirit of conciliation, (4) ready obedience to superiors, and (5) organising ability. The first four are necessary to the mass of men and will be considered here, the last is necessary chiefly to those who assume the task of industrial leadership and will be considered in a subsequent section.

Qualities Necessary to Effective Co-operation

Honesty is indispensable to mutual trust, and co-operation cannot be carried far unless men trust one another. Steadiness is necessary, because without it a complex division of labour would be wasteful rather than economical. When tasks are subdivided the performance of each successive one depends upon the performance of the preceding. Unless all or nearly all the workmen in a factory are present at the same hours each day the whole process is disturbed. A spirit of conciliation is necessary because working together involves being together, and this entails constant friction unless each is willing to make concessions. Finally, ready obedience to superiors is essential to the success of a complex division of labour, because this involves planning by one set of people and execution by another.

Such Qualities Developed by Co-operation Itself

These qualities are fostered by the very division of labour to which they are necessary. In other words, those peoples who have been accustomed to the division of labour longest have them most highly developed, while those who have only known isolated production are usually lacking in some if not in all of them. From this it results that the introduction of a division of labour into a new region is particularly difficult, while its extension after it has once been established becomes increasingly easy. The disciplinary value of a complex division of labour is clearly shown by the contrast between an industrial and an agricultural population. The former is steadier and more social, while the latter is more independent and self-reliant.

The Advantages of Co-operation

§ 79. Considering the three forms of co-operation with reference to the services which they render to production the following distinct advantages may be claimed for them:

(1) Men working together, as in the building of the pyramids, can do things which men working singly could not possibly do.

(2) By simplifying the work of each man, a division of labour shortens the time needed to master a trade. In place of the seven years' apprenticeship once necessary, modern methods of production call for but a few months' special training for most positions.

(3) The division of labour offers a varied field for industrial activity and thus enables each man with special aptitude or talent to devote his entire time to the work for which he is best fitted.

(4) By reducing the labour of each man to a few simple motions the complex division of labour is favourable to the acquisition of great dexterity. Hand and eye come to act almost automatically and with a quickness and accuracy unattainable by a man constantly varying his task.

(5) The same simplification and concentration of effort is favourable to the progress of invention. When work is so subdivided that each hand makes but two or three simple motions, the time is ripe for the invention of a machine to take the place of labour. Thus the goal towards which the division of labour is ever tending is the invention of labour-saving machinery.

(6) Co-operation permits the most economical use of land and natural forces. Each section may be devoted to the production of that particular good for which it is best fitted just as each man may devote his time to his chosen specialty. This is called the *territorial division of labour* and is increasingly important as improvements are made in methods of transporting goods from the place of production to that of consumption.

The Disadvantages of Co-operation

§ 80. Against these advantages of co-operation must be weighed one decided disadvantage. Specialisation is narrowing. If it requires a man to work long hours with his muscles it is likely to cut him off from opportunities to develop his mind. On the other hand, if it limits him to an intellectual pursuit it is likely to deprive him of the vigorous exercise needed by his muscular system. Specialisation is inimical to that all-round development of character and capacity which is the natural consequence of varied interests and varied pursuits. Carried to excess it unfits men for the enjoyment of that very wealth which it helps them in such large measure to secure.

Even from the point of view of production, however, excessive specialisation does not always result in increased productive power. In a world in which goods and processes are constantly changing special proficiency in any given line of work may at any time be superseded. When it is acquired at the expense of general development it often leaves its possessor actually worse off than he would have been without it. No group among the unemployed is so hopeless as the highly skilled artisans for whose skill the industrial world has ceased to have a use.

Other Considerations

In giving full weight to this disadvantage it must not be overlooked that co-operation, especially as it is developed in connection with the factory system, serves to bring specialists together and give them the benefit of social intercourse which the isolated producer sadly misses. Those who labour in factories describe the social aspects of their work as in large measure compensating them for the monotony of their simple tasks. If increased leisure could be added to the interchange of ideas which the factory permits, the evils of specialisation would be, if not entirely eradicated, at least reduced to a minimum.

Methods of Gauging the Advantages of Co-operation

§ 81. It is not easy to show in a statistical way how much the world owes to progress in co-operation and the division of labour. An important incident of this progress has been, as already suggested, the invention of machinery to take the place of specialised labourers, and in those cases where the division of labour has been carried furthest machinery now plays such a large part that it is impossible to decide what share of the productive result should be credited, historically, to each. One of the best ways to get an impression of the industrial results of the division of labour is to compare the work of a hand shoemaker, which may still be observed in many parts of the United States, with that performed in a well-organised shoe factory. According to an investigation made by the United States Department of Labour, the number of distinct processes into which the manufacture of men's brogan shoes is now divided is eighty-four. Many of these are performed by automatic machines. It is calculated that the McKay machine for attaching the soles of shoes to the uppers turns out

in one hour and thirty-eight minutes one hundred pairs, which it would take ninety-eight hours to sew, and twenty-five hours even to peg, by hand. From 1855 to 1895 the efficiency of labour is said to have been multiplied five-fold in the shoe industry in the United States through the introduction of a division of labour and of improved machinery.

Statistics of Pin-making in 1776 and To-day

In Adam Smith's day the best illustration of the division of labour that came under his observation was that used in the manufacture of pins. He showed that through the division of labour the average product of pins to each hand employed in a pin factory was 5000 per day and contrasted this with the one crude pin a day which a single artisan might perhaps turn out if he had to do the whole work by himself. At present pins are manufactured by automatic machinery and 1,200,000 per workman per day is said to be the output of a well-equipped factory. The progress in screw making is even more remarkable. According to estimates made by the Department of Labour 10,000 screws are now made by an expenditure of 16.7 minutes of human labour in comparison with 1250 hours formerly required to produce the same number. In this case the increase in the efficiency of labour is 4491 fold.

Progress Greatest in Manufacturing

Similar examples of progress due partly to the division of labour and partly to the introduction of labour-saving machinery might be multiplied for every branch of manufacturing. The subject has been exhaustively treated in a special report * issued by the Department of Labour and this may be consulted for other striking illustrations of improvement. On the whole it is not too much to say that the efficiency of labour in manufacturing has been increased many hundred fold by the abandonment of isolated production and hand processes in favour of the division of labour and machinery. In other branches of production progress has been less remarkable for the simple reason that they are less well adapted to these improvements.

Business Organisation

§ 82. Business organisation has been carried to such a point in modern communities that few persons now produce for themselves the things that they require. Even in country districts the typical farmer is no longer the pioneer raising food and

* Report of 1898 on Hand and Machine Labour.

materials for his family, but the producer for the market who looks to the market for most of the things that he needs. We have called this development "progress in co-operation," but it is evident that the resulting co-operation is not deliberately planned by those who participate in it. It arises spontaneously as each one follows his own interest without thought of his neighbour. As a country district emerges from the pioneer stage, different men discover that it pays them better to be specialists and to produce for the market than to produce for themselves. Thus a simple division of labour is introduced to supplement the simple co-operation that prevails even among birds and animals. The complex division of labour follows in due course because of its superior effectiveness, and in this way, as time goes on, co-operative production displaces isolated and individual production.*

The Entrepreneur

The success of industrial co-operation depends in large measure upon the ability of business managers, or *entrepreneurs.* These are the men who act as directors of industrial undertakings. They decide what shall be produced and how it shall be produced. They hire labourers and determine what they shall do. They borrow money and convert it into particular forms of capital goods or exchange it for land. Finally, they assume the risks of the businesses in which they are engaged, undertaking to pay wages, interest, and rent, whether or not the results are satisfactory.

Qualities of a Good Entrepreneur

The qualities needed by an entrepreneur are not unlike those required by a military leader. He must have energy and enterprise. He must be a good judge of men and of conditions. He must have confidence in himself and be able to inspire confidence and a feeling of loyalty in others. Above all he must have organising ability, that is, the faculty of combining men and things in the most effective way for the realisation of a desired result. A community that is well supplied with leaders having these qualities is sure to have its industrial forces turned to good account. Its labourers will be assigned the

* To distinguish this spontaneous or competitive co-operation from the co-partnership of workmen in the management of industrial enterprises, to which the term "co-operation" is frequently applied, the latter is referred to in this work as "labour co-partnership."

special tasks for which they are best fitted so far as conditions permit, and its capital will take the form of the capital goods that are found to be most efficient. Invention and discovery will be highly appreciated and progress in the technique of production will be rapid. Even a few capable entrepreneurs may secure these important results for a community. They serve the public not only by organising efficiently the special branches of industry which they direct, but by setting standards which less able men are only too glad to copy. Thus it is not uncommon in the United States to find whole towns which are literally "run" by one or two men. The same men acting in combination are coming more and more to control the important industries of the whole country, and this gives them an influence for good or evil that can scarcely be exaggerated. The greater the power of these directors of the community's industries, the greater the importance that must be ascribed to personal qualities in determining the direction of industrial development. This importance of personality as a factor in modern business was strikingly illustrated in the spring of 1900 when several English investors took out insurance policies on the life of America's leading financier, to protect themselves in case the latter's death intervened to prevent the consummation of certain gigantic financial projects of which he was the originator and guiding spirit.

The Single Entrepreneur System

§ 83. The simplest form of business organisation is that in which a *single entrepreneur* controls the whole enterprise. He may do everything for himself and use only his own capital, as do usually doctors, lawyers, cobblers, etc., or he may employ hired workmen and borrowed capital. In the United States many businesses employing thousands of men and using millions of capital have grown up under the responsible management of single individuals. The advantages of such a one-man organisation are obvious. Its disadvantages are that one man, however able, cannot be equally competent to direct all departments of a large and complex business and that the capital that one man can command is small in comparison with that which may be secured by a number of men associated together.

These disadvantages are partially overcome in a second form

of business organisation, the *partnership*. A partnership is an association of two or more individuals who are jointly and severally responsible for the management of the enterprise in which they are embarked. On forming a partnership * the partners become individually liable for all of the obligations of the firm and agree that any contract entered into by either partner in the firm's name shall be binding on all. This form of organisation is well fitted for businesses calling for a diversity of talents and requiring no more capital than a small number of men may command. Until the last fifty years it was the common form of organisation for businesses that had outgrown individual control. Recently it has given way quite largely to the *corporation,* the third important form of business organisation. The Partnership

A corporation is an association of individuals known as stockholders who are empowered by legal charter to elect annually a board of directors and through it to act as one person in the conduct of the specified business. Corporations enjoy, usually, perpetual life. They may sue or be sued, incur debts, enter into contracts—in short, do everything necessary to the conduct of business, within the limits prescribed by their charters of incorporation, as though they were individuals. The liability of the stockholders in corporations is limited usually in the United States to the capital actually paid in or pledged in return for stock. Sometimes, as in the case of the national banks, stockholders are further liable for a sum equal to the par value of the stock they own, but this liability is never unlimited as is that of legally constituted partners. The Corporation

§ 84. The advantages of the corporation for business purposes are: (1) It continues even though its promoters die or retire from business. (2) It draws its capital in large or small quantities from widely different sources and may command any amount, however great, for an enterprise in which investors have confidence. (3) It may profit by the intermittent attention of directors whose ability and experience make their services of the greatest value, but who could not be induced to Advantages of the Corporation

* Limited-liability partnerships are not included in this description because they have become an unusual type.

assume the risks incidental to partnerships. (4) It is flexible, permitting a complete change of management whenever the stockholders deem this expedient, through the simple process of an election at an annual meeting.

Its Disadvantages: Diffused Responsibility

These considerations and others of less importance have caused the corporate form of organisation to be adopted for a great variety of enterprises. It is probably within the truth to say that two-fifths of the business of the United States is now controlled by corporations and there is every indication that the proportion is increasing. This makes important the recognition of certain drawbacks attaching to the corporate form of organisation. Chief among these is the fact that responsibility for the management of corporations is diffused. In one-man businesses and partnerships the men who organise and manage the enterprises are the ones most vitally interested in their success. In corporations the stockholders, who usually furnish all or the greater part of the capital required and have to bear the loss if things go wrong, entrust their interests to the board of directors. The board of directors in turn deputes the actual management of the business to a salaried president or manager who may not, and often does not, have any further interest in the business than that his reputation depends to some extent upon the honesty and wisdom with which he manages it. The entrepreneur function is thus divided in the corporation between three parties no one of whom has the same vital interest in the business that the single entrepreneur or partner feels in businesses conducted on the other plans. Moreover, few directors or managers have not, at times, private interests in conflict with the corporate interests they are supposed to promote. This diffusion of responsibility and of interest causes corporate management to be often wasteful and sometimes corrupt. The salaries paid are frequently higher than they need be to secure the required grade of labour, appointments are often determined by personal rather than by business considerations, and inflated prices are often paid for materials in consequence of the fact that particular directors are interested in their production. More common than these clear violations of trust are misrepresentations in regard to the affairs of the corporation intended to influence

the stock market and to enable those interested to carry through some deal for their own benefit.

Misuse of Borrowing Power

A second abuse is connected with the borowing power of corporations. When this power is used to secure money by means of a sale of bonds the law gives to bondholders no voice in the management of the corporation so long as the interest is paid and the principal is not defaulted. The larger the proportion of the capital required for any enterprise that is secured through the sale of bonds, the smaller is the interest in the business of the stockholders, who nevertheless continue to control it. It has often happened in connection with railway corporations in the United States that the entire capital has been secured by selling bonds and that the stock has represented simply a bonus paid to the promoters of the company. This is a situation fraught with danger, as American experience has abundantly proved. To give a fictitious value to their stock promoters are only too apt to pay dividends out of earnings that should be expended for renewals and replacements. Before the corporation is reduced to bankruptcy they can usually sell their holdings to unsuspecting investors and retire, leaving to the latter the task of reorganising the business.

Disregard of Public Interest

A third set of evils has reference to the general or public interest in corporations. Individuals in their pursuit of gain are controlled by the moral standards of their business associates. Corporations have no moral standards. Their directors are willing to wink at practices on the part of the officials they appoint to which they would not themselves stoop. Corporate officials, moreover, do not hesitate to do things in the name and under cover of their corporations which they would be ashamed to perform openly for themselves. In the United States corporations have been guilty of buying legislatures, corrupting judges, bribing juries, entering into agreements with political parties insuring them certain privileges in return for campaign contributions, and in fact of every sin in the political calendar. It is owing largely to them that the tone not only of business but of political morality is so much below the standards of private life. This third group of evils is at the basis of the "corporation problem." As this is a

phase of the more important "trust problem" its fuller discussion is postponed to the chapter on Trusts.

Practical Aspects of Corporation Problem

The stockholders of corporations might from what has been said be expected to manifest an active interest in their management, and this is true of large stockholders who are likely to be at the same time directors. Small stockholders, however, are very often surprisingly indifferent so long as dividends are regularly paid and nothing occurs to excite their suspicion that the business is being improperly managed. When a corporate enterprise is first launched its stock is likely to be subscribed in large blocks by the men most interested in it and most sanguine of its success. Some shares may go to the general public, but usually a controlling interest is retained by the men who have most to lose if the business fails. During the first year or two the stockholders and the active directors are thus apt to be identical or so nearly so that risk and responsibility go together. Among the directors there is likely to be a guiding spirit who performs all the essential functions of the entrepreneur except that others share with him the risks of the enterprise and the minor details of management. After a corporation is firmly established on a paying basis the same conditions may and often do continue, but it is quite as likely that the organisers will gradually dispose of their interests to investors so that they may have their capital free for the promotion of other enterprises. When this occurs the stock is gradually diffused throughout the community until the largest holdings represent far from a majority of the outstanding shares and the control of the corporation has virtually passed out of the hands of the few into the hands of the many. Under these conditions the control of the business depends not on the actual investment of capital in it, but on control over the votes of widely scattered and uninformed stockholders. The situation is still favourable to the ascendency of some one man of great organising ability and much depends upon the moral qualities that such a man brings to his position. If he is self-seeking and unscrupulous he may pack the board of directors with followers of the same stamp and deliberately wreck the enterprise for his own aggrandisement. If, on the other hand, he is honestly anxious to promote the interests of the company, and brings

ability to his task, he will put in as directors the best men he can get and build up an organisation whose efficiency will compare favourably with that of businesses owned and controlled by single entrepreneurs or partners. At each stage in corporate development the tendency thus appears to be toward control by one man or a small group of men, however widely the stock may be distributed. Successful corporations are as much one-man or few-men enterprises, as regards their actual management, as firms composed of partners. The chief difference is that corporate entrepreneurs incur but a small part of the actual risk of loss that partners incur and must be held to the efficient performance of their duties, if at all, by higher standards of honesty and faithfulness to trust than are demanded in the latter form of organisation. In spite of the many abuses connected with corporate finance in the United States the rapid extension of the corporate form of organisation is believed to be proof of parallel progress in business morality. If directors of corporations were not as a class honest and upright men, few large corporations would be formed, for the simple reason that few people would be willing to invest their capital in such hazardous enterprises.

Large- *vs.* Small-scale Production

§ 85. Different branches of production vary greatly as regards the size of the business unit which is best adapted to them. In farming in the United States the small farm of from twenty to two hundred acres seems to be displacing the larger farm of five hundred acres and upwards. In manufacturing and transportation, on the contrary, large-scale production is becoming more and more the rule. The striking merit of small-scale production is the undivided attention which it permits the entrepreneur to give to all of the details of the business. This is particularly important in farming and in artistic and professional work, where continuous attention to matters of detail is the chief requisite to success. It is less important in manufacturing and transportation because the operations required in these businesses can be reduced to routine and an efficient check on the work of employees can be maintained by occasional attention to what they are doing. In these industries a great variety of contrivances which compel men to register the results of their work as they perform it have been invented,

and these act as mechanical substitutes for "the master's eye." Also where automatic machinery is used, the pace is set for all operatives and they have to fall in with it or incur the risk of being discharged for incompetence. Finally, the system of paying wages in proportion to the pieces turned out, or the *piece-wage system,* makes the interest of the labourer as great as that of the employer in the efficiency of his work. By these methods and others considered in the chapter on Trusts large-scale producers in manufacturing and transporting industries offset the more careful supervision and attention to details of small-scale producers.

Advantages of Large-Scale Production: Division of Labour

Large-scale producers enjoy besides important positive advantages: (1) As was pointed out in connection with the discussion of partnerships and corporations, they can command a variety of different talents and place them in those departments for which they are best fitted. This is another way of saying that they are able to apply the division of labour even to the executive branch of a business and to reap all of the advantages that result from it. For a simple business such as farming, which because of its periodic character offers continuous employment to no specialists, this consideration is of slight moment. For manufacturing and transporting industries which have several departments going all of the time, however, it is very important.

Expensive Machinery

(2) Large-scale production permits the economical utilisation of expensive machinery and equipment which the small-scale producer cannot afford, or which it would not pay him to have because his small business would not keep it continuously employed. Farmers surmount this difficulty in a measure by owning expensive machines jointly and sending them round from one farm to another as they are required. Manufacturers can hardly do this because their machinery is for the most part stationary. At best it is a poor substitute for undivided ownership and control, as all farmers who have tried it testify.

The above consideration applies with special force to the transporting industries. Canal and railroad companies require expensive excavations and roadbeds. In these a large part of their capital is invested, and interest on this capital and expenses

connected with the maintenance of way constitute a large element in their expenses. The amount of traffic that may pass through a canal or over a railroad is limited only by the frequency with which boats or cars may safely be sent after each other. Moreover temperature changes, storms, etc., determine the expense of keeping the system in repair much more than the volume of business done. It results from these facts that the expense—as regards capital account—per passenger or per ton of freight carried diminishes steadily as the volume of business grows. The original cost and the outlay for maintenance of way appear as fixed charges and the larger the business done the smaller is the expense per unit as regards these items. If the running expenses per unit are fairly constant, as they are apt to be for a well-managed canal or railroad, the large-scale transportation company has here a marked advantage over its smaller competitor and an advantage which grows as the business grows until the traffic has become so large that it cannot be handled without numerous accidents. In the light of these two advantages concentration in the transporting industries and in many branches of manufacturing seems a perfectly natural and economically desirable tendency.

Advantages in Transporting Industries

(3) A third advantage of the large-scale producer is in connection with the purchase of materials and the sale of products. Sellers of materials are willing often to make concessions to large buyers, and in marketing products the large seller may arrange his advertising more economically than his small competitor.

Economy in Buying Supplies

(4) Large-scale producers can make a better use of by-products. In the mineral oil and the meat-packing industries large-scale production has made possible the utilisation of waste products to an extent undreamed of when these businesses were carried on by small firms, and to the advantage of the whole community.

Economy in Connection with By-products

(5) A fifth advantage is found in the large expenditures which a large-scale producer is able to make on experiments looking to the improvement of the technique of production. In businesses which are changing their methods continuously, to be the first to introduce a valuable innovation means often the difference between success and failure. Many of the manu-

Can Spend More on Experiments

facturing establishments which have been most successful in the United States in recent years, such as the Carnegie Steel Company of Pittsburg, have owed their success in no small degree to their lavish expenditures on industrial experiments and for the installation of new machinery as soon as its superiority to that in use has been demonstrated.

Business Enterprises Classified

§ 86. Large-scale production, it must be clearly understood, is by no means synonymous with monopoly or exclusive control of a given branch of production. Nevertheless, in those cases in which the advantages of large-scale production persist, no matter how large the producing unit becomes, monopoly is the goal towards which the business is developing and which it will ultimately attain. This suggests a threefold classification of industrial enterprises: (1) businesses in which the small-scale producer has the advantage, as in farming in the United States; (2) businesses in which large-scale production is more economical up to a certain point, beyond which the loss in efficiency resulting from the absence of the direct and personal supervision of the entrepreneur more than offsets the gains from further concentration; (3) monopolies. In this classification the terms "small-scale" and "large-scale" production are used somewhat vaguely, but they serve fairly well to distinguish those businesses in which competition persists year after year with no sign of abatement, from those in which competition has ceased or has become so irregular and spasmodic that it can no longer be depended upon.

The Representative Firm

§ 87. As special chapters are devoted to monopolies it will not be advisable to discuss them further at this point. Although numerous and perhaps multiplying in the United States, monopolies as yet dominate but a small part of the vast field of production. Farming, most branches of mining, lumbering, fishing, manufacturing, trade, banking, and many branches of the transporting industries, are still controlled more or less completely by competition. In each of these industries at any given time there is a certain size of business plant which under average management is most conducive to economical production. This may be designated as *the representative firm.* As methods of production change, the size of the representative firm of course changes also, but such changes are gradual and

may without serious error be overlooked in connection with the consideration of the broader problems of economics.

Compared with Trees in a Forest

The representative firms in each branch of business may, as Professor Marshall has suggested, be compared to the full-grown trees of a primæval forest. Around them and competing with them for customers are overgrown firms that are falling into decay and new firms that are gradually making a place for themselves, just as in the primæval forest overgrown and decaying trees and aspiring young saplings struggle with their full-grown brothers for a share of earth and sunlight. And just as the trees of full growth are the dominant feature in a primæval forest, so representative firms dominate in business.

Summary

§ 88. The contents of this chapter may be summarised as follows: The productiveness of labour is increased by co-operation, which may take the form either of simple co-operation; a division of employments, or simple division of labour; or a subdivision of tasks, or complex division of labour. The extension of the division of labour is limited by the development of markets and of facilities for transportation. As the latter improve, business is concentrated in the most favourable situations and the division of labour is made more minute. Ability to co-operate depends on certain qualities and these are developed most readily by co-operation itself. Co-operation has important advantages, but it has also the disadvantage of encouraging excessive specialisation, which must be neutralised, if deterioration is to be avoided, by added leisure for the working classes. The remarkable increase in the productiveness of labour which has been due to co-operation is illustrated in the shoe, pin, and screw industries.

The central figure in business organisation is the entrepreneur and much depends upon his ability and judgment. Three principal forms of organisation may be distinguished, the single entrepreneur, the partnership, and the corporation. Of these the last already dominates at least two-fifths of the business carried on in the United States, and this lends special interest to a consideration of its advantages and disadvantages. Related to the problem of business organisation is that of small *vs.* large-scale production. Analysis suggests a threefold classification of business enterprises and leads to the recognition

of the dominant influence of the representative firm in the first two, in which competition is a persistent force.

Relation between Production and Distribution

In the next chapter we pass from production to distribution. Both parts of economics deal with the same phenomena, that is, with wealth creation through the application of labour aided by capital to land, but while in production the creation is the important thing, in distribution the motives which control men and the relation of the parts which different factors play in this creation are important because upon them depends the division or sharing of the wealth created. As the analysis proceeds it will appear that production and distribution mutually determine each other.

REFERENCES FOR COLLATERAL READING

**Marshall*, Principles of Economics, Book IV., Chaps. VIII.–XIII.; *Walker*, Political Economy, Part II., Chap. IV.; **Nicholson*, Principles of Political Economy, Book I., Chaps. VII.–X.

CHAPTER IX

PRODUCTION AND DISTRIBUTION

The Different Branches of Production

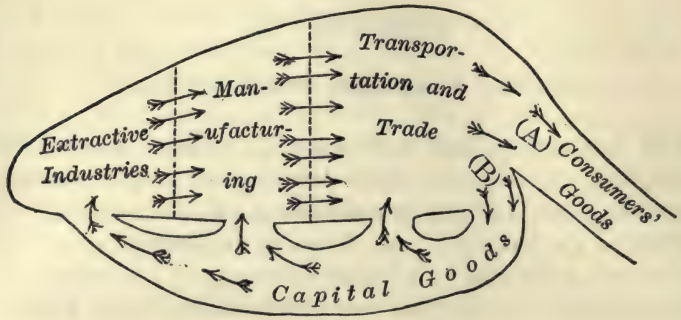
§ 89. Looking at modern business in a concrete way we may distinguish the following main branches into which production is divided: (1) hunting and fishing, (2) stock-raising, (3) farming, (4) forestry (*i. e.,* logging, lumbering, etc.), (5) mining and quarrying,* (6) manufacturing, (7) building, (8) transporting, (9) wholesale and retail trading, (10) produce and stock broking, (11) banking, and (12) insurance. Although by no means exhaustive this list includes the principal businesses to be found in a modern community arranged in about the order in which they have attained prominence. Reviewing them with reference to the forms of business organisation best adapted to them, we find that the single-entrepreneur and partnership systems dominate in hunting, stock-raising, farming, building, broking, and trading; that single entrepreneurs, partnerships, and corporations exist side by side in lumbering, mining, and manufacturing, with the balance inclining ever more and more toward corporations; and that the corporate form of organisation holds undisputed sway in transportation, banking, and insurance. In general the corporate form of organisation is that preferred in branches of business where large-scale production is found to be most economical, while in businesses for which small-scale production is better adapted single entrepreneurs and partnerships still have the advantage.

Graphic Representation of Relation of Different Branches

For purposes of analysis it will be convenient to distinguish even fewer branches of production, as follows: (1) the extractive industries, which supply materials, (2) the manufacturing industries, which combine and fashion materials into the forms desired by consumers, (3) transportation and trade, which bring manufactured goods to those who are to use them.

* These five are often described as the *extractive industries*, since their task consists in securing materials directly from nature.

A rough picture of the relation between production and distribution is given in the following figure in which the above three branches of production are alone represented:



As represented in the above figure the three great branches of production are being carried on simultaneously and the goods produced are flowing in a vast stream from the extractive industries, where they originate as materials, to traders who dispose of them in finished forms either to consumers or to producers who use them as capital goods or aids to further production. Although working contemporaneously, successive groups of producers are, of course, engaged on materials previously produced by those employed at the preceding stages. Manufacturers are manufacturing materials turned out somewhat earlier by the extractive industries and transporters and traders are handling goods previously manufactured. The iron ore and the coal that are being mined to-day will come together in blast furnaces and steel mills some weeks or months hence; the resulting steel will be fashioned into axes, ploughs, building frames, etc., some weeks or months after it has been reduced to ingots or rolled into bars; these steel products will contribute to the satisfaction of the wants of consumers at a still later period. The average time taken, as production is now organised in the United States, to convert raw material into consumable commodities cannot be accurately measured, but it is certain that it runs into months and probable that it exceeds a year. The vast majority who are at work on any given day help to produce materials or unfinished commodities.

Only the few whose business it is to apply the final touches or to render personal services, such as retail salesmen and deliverers, bootblacks, barbers, cooks, etc., see their efforts contribute directly to the satisfaction of wants. In other words, of the products of each day's industry by far the larger part are capital goods not yet ready for consumption and only a small portion are consumable goods actually delivered to consumers.

The Real Incomes of All Classes Are Paid out of Capital

But however production be organised men must have consumable goods to live. Their *real incomes,* that is, the commodities and services which they take as their definite portions of the community's income of wealth, must be mainly in the form of things which they can consume from day to day. Hence all but the small part of income, which is produced immediately before it is consumed, comes each day not from that day's products, but from the products of previous days' industry stored up as capital goods in the hands of dealers. Some of the older English economists made quite a point of the fact that "wages are paid out of capital," but it is equally true that other incomes, interest, rent, and profits, so far as they are spent, come out of capital also in the same sense as do wages. The fact is that current industry is devoted chiefly to the production of capital goods and that those engaged in industry or entitled to income receive as their remuneration chiefly other goods withdrawn from capital for consumption. Thus the community's capital is replenished by production at the same time that it is depleted by distribution and consumption, and it is for economic analysis to explain the principles which determine the shares in distribution and to show the connection between the things that men produce each day and the different things which they withdraw as income and consume.

Items in the Expense of Production

§ 90. The *expenses of production* include every item of outlay which producers must normally and regularly incur to put goods on the market and effect their sale and also such compensation as producers normally and regularly require as the condition to their continuing to serve industrial society in the capacity of entrepreneurs. These items are as follows: (1) Outlay for materials, wear and tear of buildings and ma-

Materials

chinery, etc., which may be included under the *expense of replacing capital goods used up in production.* (2) Premiums paid for the insurance of capital goods. (3) Interest for the use of capital. (4) Wages to labourers of all grades. (5) Rent of land and natural power used in production. (6) Taxes. (7) Minimum profits to the entrepreneur to remunerate him for his own time and trouble. The first item calls for no explanation. As a matter of course every business man charges his outlay for materials against the price he receives for his products.

Insurance Premiums

Premiums for insurance, looked at broadly, are merely additional expenses for the replacement of capital and may properly be included in the first item. Insurance companies learn by experience what proportion of the particular kinds of capital goods they insure is likely to be destroyed in a normal year. They charge rates which will enable them to replace losses and at the same time make some profit for themselves. When organised on the mutual plan, as is increasingly common, their character as agencies for the co-operative replacement of capital goods liable to destruction through accident is clearly apparent, as the element of profit is then eliminated and the officials of the company appear as the employees of the insured for whose sole benefit the business is carried on.

Interest

The item of interest for the use of capital is calculated at a certain rate per cent per annum for the capital employed. Thus if a business ties up on the average throughout the year capital goods worth $10,000 and the current rate of interest is five per cent., $500 should be charged as expense for interest. This item appears whether in the particular business considered borrowed capital or capital belonging to the firm is used. If the former is the case the expense for interest is an actual outlay, if the latter, it is a virtual outlay, since using the capital in the business prevents loaning it at the current rate to some other entrepreneur.

Wages

The propriety of naming wages as one of the items of expense is obvious. As the term is here used it includes all payments to labour whether wages in the ordinary sense or salaries. It is convenient to go even further and to include in it the seventh item enumerated above, the minimum profit re-

ceived by the entrepreneur, on the ground that the latter is merely a *wages of management* and as appropriately included in wages although paid by the entrepreneur to himself, as is the interest charged for the use of a firm's own capital included in interest. The amount that should be charged as wages of management or minimum profit is what the entrepreneur could obtain for his services if he worked for wages or for a salary for a corporation or other employer. Unless he normally obtains this at least from the business he carries on, he will give it up and become a salaried official.

Rent

The rent of land or natural power was spoken of in Chapter VI. as a profit over and above the expenses of production. To the farmer cultivating his own land it is an item of return rather than an outlay; but the same reasons that make it desirable to include an allowance for interest on a firm's own capital and for wages to the entrepreneur himself among the expenses of production, lead economists to treat rent also as an expense of production. To the entrepreneur using leased land rent is an expense. If instead he uses land which he himself owns it is virtually an expense because by using it he loses the rent he might have obtained had he leased it to another. As already stated, rent is a variable item to different producers depending on the quality and situation of the lands they use. It does not appear at all among the necessary outlays of so-called marginal producers. But the land or power that can be used free of charge is of poor quality, and most producers find rent an important item among their expenses.

Taxes

Taxes are another irregular charge from which many producers are exempt. Their amount depends upon the arbitrary decision of the taxing power, and for this reason and because they do not affect at all many branches of production, we may leave them out of account in our treatment of distribution.

Summary

Summarising the results of the preceding discussion it appears that the items in the expense of production may be reduced to four: (1) Expense for replacement or maintenance of capital goods, (2) interest, (3) wages, (4) rent.

Differences in Expenses of Production

§ 91. The expenses of producing commodities of each sort are different for different firms. For new firms just establishing business connections and not yet able to produce on the

scale that experience has shown to be most economical, expenses are high. They are high also for old firms that are overgrown or for some other reason are falling into decay. They are lowest for the representative firms which have attained just the size conducive to economical production. Differences might be expected to arise also from differences in the quality of the land and natural power used and in the abilities of entrepreneurs, but it must be remembered that these are fully covered by the items rent and wages of management included in the expense of production itself. For example, if two equally able farmers produce wheat for the same market, and the first obtains in normal years twenty-five bushels to the acre for a given outlay of labour and capital, and the second only twenty bushels for the same outlay, the difference must be due to differences in the fertility of the areas cultivated and should be credited to the better land as rent. If the cultivator did not own the better land, or if he decided to lease it to someone else, the equivalent of this difference in product might actually be required as the proper rent per acre of the better farm over and above the rent that must be paid for the other. In the same way able entrepreneurs, whose careful planning and wise supervision keep down the other expenses of production, require proportionate compensation in high wages of management. Such men know pretty well what their services are worth, and unless their occupation rewards them adequately will turn to something else.

The Normal Expenses of Production

The expenses of production of the representative firm are the *normal expenses of production* and so long as competition remains an active force they determine the normal price about which, as already explained, the market price of each competitively produced commodity tends to oscillate. The market price cannot fall for any length of time below the expenses of production to a representative firm, for under such circumstances representative firms suffer losses and proceed to curtail production until demand for the diminishing supply of the commodity brings its price back to a remunerative level. The market price cannot rise for any length of time above them, because then all representative firms will be making an extra profit and some will seek to secure more of it by enlarging the

volume of their production. Supply will be increased and this in time will bring the price down to the old level, or force it below it. Or, looking at other effects, as the price falls below the expenses of production to the representative firm, decaying firms are forced into bankruptcy, and new firms are so discouraged as to withdraw from the business, and in this way supply is lessened. On the other hand, a rising price not only encourages tottering firms to keep up the struggle, but induces new firms to enlarge the capacity of their plants for the double purpose of selling more at the high price and of realising the economies of large-scale production. In these ways the supply is increased and the price is brought back to the normal.

Active Competition Assumed

It must be carefully noted that the above reasoning assumes not only active competition, but the absence of change as regards the expense of production per unit of product which representative firms incur. If conditions are changing so that these expenses are rising steadily, or so that they vary constantly from high to low, even the most persistent competition may fail to cause the price of the product to correspond accurately to the normal expenses of production. It would tend always towards such correspondence, but it might never attain to it.

Normal Prices Just Cover Normal Expenses of Production

Normal prices for competitively produced goods just cover the expenses of their production—the allowance for the replacement of capital goods, interest, wages, and rent. As a usual thing these four items of expense are incurred by the entrepreneur before production is concluded and before he knows what prices he is going to get for his products. He buys his materials, tools, machinery, and other capital goods at current prices, he borrows capital to pay for them and perhaps to pay wages at current rates, he hires labour and leases land on the terms fixed for him by general market conditions rather than on his own terms, and all of these arrangements are entered upon before the product is ready for sale. It is in this contracting to pay the expenses of production before the product is ready for sale or the price to be received for it known, that the principal risks of business, which it is the entrepreneur's function to incur, consist. If prices are normal the representative firm receives from its sales just enough to cover its ex-

penses of production including an adequate wages of management. Any deviation from the normal means extra profit or unexpected loss to the entrepreneur or to stockholders, who are the risk-takers in corporate enterprises.

Reasons for Deviation of Market from Normal Prices

The market prices of goods may differ from the normal prices corresponding to the normal expenses of producing them, either because conditions are changing and competition has not yet adjusted supply to demand at the new normal price level, or because competition is itself absent and monopoly stands as a barrier to such an adjustment. In the former case we have to do with what we may call a net or competitive profit (or loss); in the latter with monopoly profit.

The Relation between Production and Distribution

§ 92. From the point of view of production, rent, wages, and interest are expenses, while competitive and monopoly profits are surpluses due to deviations of market prices from the normal. From the point of view of distribution, all five are shares into which the net product of a country's industries, that is, the gross product less the deduction required to replace and maintain the fund of capital goods, is divided. The problem of distribution is to explain what causes at last analysis determine the size of these different shares. In the following pages it is attempted to prove the thesis that competition tends to secure for each factor in production a share of the product equal to what it itself produces. Every circumstance which causes market to diverge from normal prices interferes with this result and occasions profit or loss to entrepreneurs above or below their proper wages of management. The chapters on Net or Competitive and on Monopoly Profits discuss the circumstances that may cause such divergence and the shares of income to which they give rise. The chapters which follow on Rent, Wages, and Interest attempt to show that each tends to be the share of the normal price corresponding to what the factor concerned contributes to production. Finally, the concluding chapters on Value and Distribution recapitulate the explanation in more general terms and attempt to clear up difficulties and answer objections. As a preparation for this most difficult part of economics, the following sections try to distinguish sharply between the normal and permanent influences which have to be considered in connection with an analysis of

production and distribution and the fleeting changes which because of their novelty receive frequently more than their proper share of attention.

The Problem of Distribution

§ 93. Distribution may be compared to the division of a great river into smaller rivulets. Like production it is a continuous process, that is to say, it has to do with *flows* rather than with *funds* of goods. In the figure on page 156 production is represented as pouring a continuous stream of goods from extractive industries to manufacturers and from manufacturers to transporters and traders. Through the agency of the latter this stream is subdivided, one part being turned back in the form of capital goods and the other being passed on to consumers. From the gross product resulting from the industry of each period must be deducted the capital goods needed to repair and replace those destroyed in the course of production, to determine the net product. It is the latter or its equivalent that is distributed as flows of income to sharers in distribution.

The Money Income

As already pointed out, those who have claims on the community's wealth because of services they have rendered to production rarely share the identical goods which they have helped to produce. They desire not these but other goods and their wishes are easily gratified through the use of money as the medium of exchange. This interposition of money gives importance to the conception of *money return* and *money income*. The gross money return at any stage of production is the gross price received for the gross product at that stage. From this must be deducted the price of capital goods destroyed or deteriorated, that is, the money outlay, to get the net money return or the money income at that stage. Viewed in a comprehensive way, the gross money return is the gross price of the gross product; the net money return or money income is this gross price less the price of capital goods destroyed in the process of production; and the difference between this money income and the expenses of production in rent, wages, or interest constitutes the profit or loss of entrepreneurs.

The Real Income

The money income is merely the convenient medium by means of which the real income of the community is divided among those entitled to share it. This real income consists of

consumable goods for those who spend their entire money incomes and partly of consumable goods and partly of capital goods for those who save. It will be convenient to describe the first as the *real income of present goods* and the second as including also a *real income of future goods.* Reverting to the figure on page 156 we see that at each stage of production products are being passed on to the succeeding stages. For these products a gross price is paid, which suffices normally to cover the outlay for capital goods destroyed in production and to give a net money return or money income to be distributed. So far as it is spent this money income is exchanged for consumable goods to be had from the stocks of traders at the final stage of the productive process. These are withdrawn from the community's capital, while the actual products which give rise to the money income are added to its capital. But a part of the income may be saved. This implies the diversion of land, labour, and capital goods from the production of consumable goods to the production of tools, machines, buildings, etc., to serve as aids to further production and an increased outflow of such goods along channel *B* in the figure. Its temporary effect is to lessen the output of consumable goods, but ultimately it tends to increase it, since it adds to society's equipment in capital goods.

State of Normal Equilibrium

§ 94. A clearer picture of the relations between product, money return, and real income may be formed by abstracting from the familiar phenomena of progressive societies those which make for change and consequently for confusion and concentrating attention on permanent and normal forces. Imagine that productive processes are brought to a state in which no further improvements are devised; imagine that sources of natural power assist production without the slightest variation from year to year, that land renews its fertility regularly, that new mines are discovered as old mines become exhausted, and that the uncertainties of climate and season are temporarily suspended; imagine that population is stationary and that each grade of labour is self-renewing and self-perpetuating; imagine that the stock of capital goods is kept intact by continuous renewal without increase or diminution; imagine that the wants of consumers are as unchanging as are

all of the other conditions assumed; finally imagine free, all-sided competition serving to maintain a constant correspondence between market and normal prices. In such a society production, distribution, and consumption would go on very much as they do in actual society. The effective demands of consumers would cause a certain correlation of the factors of production, which once made would not be changed, because every circumstance making for change had been eliminated. The capital goods destroyed in each productive period would be exactly replaced, but no more than replaced, and the entire money income would be spent regularly for consumable goods, which would be as regularly produced. All industries would be competitive and all prices would be brought to the normal and held there through the influence of active competition undisturbed by change. Under such conditions economic forces would be brought to a state of normal equilibrium.

Graphic Illustration

Such an industrial society may be represented by the figure on page 156. The kinds and quantity of capital goods withdrawn from the stocks of traders and sent back along channel *B* are now exactly determined by the kinds and quantity of capital goods used up in the course of production. There must be at each stage an exact replacement so that each process may go on in exactly the same way although using fresh materials and new instruments. Thus if the week is taken as the unit production period, the week's destruction of tools, machines, buildings, and other instruments of production must be just made good by the week's flow of finished capital goods from dealers to those engaged in the different branches of production. The week's output of materials in the extractive industries must just replace the worked up materials which manufacturers pass on each week to transporters. These latter must just balance the week's deliveries of manufactured goods to dealers, and the week's sales and deliveries of dealers must just dispose of the goods received in a week through transporting agencies.

§ 95. Under the conditions assumed above the net product and the real income of consumable goods would be identical as regards both the kinds and the quantity of goods of which each is composed and the money income would exchange indiffer-

The Relation between Production and Distribution in the State of Normal Equilibrium

ently for either. This must be the case because the week's output of materials in the extractive industries must include the materials needed to replace those withdrawn in consumable form each week and also those contained in the week's flow of capital goods from dealers to the different stages of production. The former is the net product at the first stage. The week's output of manufactured goods must carry this same volume of materials a stage farther by adding to them form utilities, of which a part will replace the form utilities in the week's outflow of consumable goods and a part those in the simultaneous outflow of capital goods. The former is the net product at this second stage. Similar relations must prevail at subsequent stages if the exact equilibrium assumed is maintained. It follows that the week's outflow of consumable goods consists of materials, form utilities, place utilities, etc., corresponding exactly to the same week's net production of materials, form utilities, place utilities, etc., at the different stages of production. The identical products will remain, most of them as unfinished goods, but exactly similar utilities will be taken and consumed by those entitled to share in these products. It will still be true, literally speaking, that the shares in distribution come, for the most part, out of capital in anticipation of the product rather than out of the current product itself. But this fact will have lost its economic significance since the consumable goods taken in exchange for money incomes are exactly replaced in the stocks of dealers by the advance of other goods to this last stage. The places of the latter are filled in the same way down to the earliest stage where new materials are withdrawn from nature's storehouses to take the places of those previously withdrawn and passed on to manufacturers. Virtually, then, real incomes will consist in such a society of the net product, since the latter exactly replaces the former and prevents entrepreneurs and capitalists from depleting their stocks in the least by advancing rent, wages, and interest to those who receive them. Entrepreneurs as a class will secure through production in one hand what they pay out as the agents of distribution with the other and as they pay it out. This does not lessen in the slightest degree the importance of capital goods as secondary

factors in production. Their presence is still indispensable to the continuance of the roundabout processes upon which the efficiency of production so largely depends. It does, however, throw a helpful light upon the true relation between capitalists and recipients of income. Under the conditions assumed this relation is one of mutual dependence, the service of capital being to enable those who take part in production to secure at once in consumable form the equivalent of what they produce, irrespective of the forms which their particular products may take.

Helpfulness of the Assumption of a State of Normal Equilibrium

§ 96. No one of the assumptions upon which the society which the reader has been asked to imagine rests is fully realised in any actual society; and yet there is more in common between it and actual industrial societies than might at first be supposed. The dominant characteristic of the latter looked at in their entirety is not change, but permanence and stability of relations. Men drop out, but others inherit their tasks and perform them much as they did themselves. Population is not stationary, but it is so nearly so from year to year, that the great majority of the children born every week virtually take the places of persons who have just died. Goods are worn out and destroyed, but new goods are being produced in a continuous stream, so that the aggregate wealth of society changes little over short periods either as regards its amount or the kinds of goods of which it is composed. In the same way improvements in methods of production, if all processes are considered, follow each other but slowly. Moreover, in every society, no matter how rapidly it is progressing in population, wealth, or the technique of production, economic forces are constantly working towards the state of normal equilibrium. Every change gives a new direction to competition, and monopoly constantly intervenes to prevent competition from working out its full effects, nevertheless competition persists and actual conditions never depart very widely from those which we have characterised as normal. For these reasons many of the propositions which apply without qualification to an industrial society in a state of normal equilibrium, apply with substantial accuracy to progressive societies. In the United States as in the imagined society, for example, the greater part of the

wealth withdrawn each week from dealers' stocks to constitute the real incomes of sharers in distribution is replaced in kind and quantity by the net product of the week's industry, in the same way that the water which flows through a mill-race from a pond kept at a certain level is replaced by the water which flows from the mill stream on the other side. As in the latter case we may say that the water which propels the mill wheel during any hour is virtually the water that flows into the mill pond, so we may say in the former that real incomes come virtually from the net products of industry. To afford a clear demonstration of this important proposition is the principal function of the assumption of a state of normal equilibrium. If notwithstanding all of the complexities of actual industrial relations it is substantially true that the net product of industry from day to day and week to week is the source of the real incomes that are received by those who take part in production, an invaluable clew has been discovered to the solution of the problem of distribution. It is the task of the following chapters to follow this clew to its logical conclusion. Before entering upon it, however, we must explain the incomes which we have styled competitive and monopoly profits, which persist in actual industrial societies because some or all of the conditions necessary to the state of normal equilibrium are not completely fulfilled.

REFERENCES FOR COLLATERAL READING

* *Clark*, The Distribution of Wealth, Chaps. II.–VI.

CHAPTER X

DISTRIBUTION: NET OR COMPETITIVE PROFITS

The Wages of Management

§ 97. As an introduction to an analysis of the causes of net or competitive profits, a more exact description should be given of the "wages of management." As business is now organised in progressive countries there is a demand for hired workers possessing every variety of ability. From the forty cents a day paid to wage-earners in certain occupations in the United States to the $100,000 a year paid to the president of the United States Steel Corporation is a long step; but these and all intermediate earnings of hired workers are to economic analysis simply wages paid for services rendered. Nearly if not quite as comprehensive as the wages scale is the scale of entrepreneurs' earnings or wages of management. All but the very lowest groups of hired workers have among them individuals who may, if they choose, set up in business for themselves. Even sweat-shop employees have as an alternative occupation peddling, in which they assume the risks of loss. Agricultural workers may become homesteaders or in the more settled portions of the country may rent small plots of land to cultivate at their own risk. Similar but more numerous alternatives are open to the higher groups up to the highly paid managers of large corporate enterprises, any one of whom could with his superior executive ability direct either of a number of businesses successfully.

The Wages of Management Set a Minimum below which Profits Will Not for any Length of Time Fall

When a man who is or might be earning a certain wage or salary as an employee, chooses instead to figure as an independent entrepreneur, it is reasonable to assume that he expects to better his condition. He may make the change because he loves independence or because the new occupation is more congenial, but he is not apt to make it unless he expects also to realise the same or higher earnings than in the other position open to him. The wage or salary that might be ob-

tained is thus a minimum profit or wages of management that must be paid to the entrepreneur in order to secure his services in connection with his entrepreneur function. At any given time the members of any group of workers may be distinguished into three types: (1) men and women who do well as employees, but have not the enterprise to set up in business for themselves, (2) men and women who are planning to become entrepreneurs and are only waiting for favourable opportunities to begin, (3) men and women who have been entrepreneurs, but have been compelled through failure to return to the ranks of hired workers. Individuals of the first type exert little influence on the earnings of their group. They accept what industrial conditions enable them to get. Those of the second and third types, on the other hand, are important factors in determining the amount of these earnings. The former are constantly studying other industrial opportunities and through their readiness to abandon the positions which they have in order to launch out as entrepreneurs, the rate of wages for their group is prevented from falling below the earnings of entrepreneurs of the same grade. More important for our present purpose is the conduct of persons of the third type, who have resumed their posts as wage-earners because their earnings as entrepreneurs have ceased to equal even the wages that they can obtain in such positions. Their ready return to the ranks of employees prevents entrepreneurs' earnings from falling except for brief periods below the wage level.

The Wages of Management May Be a Very Large Sum

The wages of management has been defined as the wages or salary which an entrepreneur might earn by working for hire. It is large or small according to the grade of labour for which the entrepreneur is fitted, and may equal only the dollar or less a day of the itinerant peddler or organ grinder or the $100,000 a year of the salaried manager of a billion-dollar corporation. Arguing that free competition tends to keep the earnings of entrepreneurs down to bare wages of management, does not, therefore, imply that these earnings are scanty. Bare wages for the efficient manager of a gigantic corporation constitute a princely income. It simply recognises that wages of management are governed by the same law that controls wages

generally and that for this reason they require no separate explanation.

Conditions Fixed for the Entrepreneur

§ 98. In this chapter we are confining attention to net or competitive profits. To understand the origin of such profits one must appreciate clearly the limits to the power of the individual entrepreneur over the conditions under which he carries on business. In the first place the entrepreneur's influence over the prices at which he buys materials and other capital goods and at which he sells his products are determined largely by general market conditions. In a progressive society in which prices are constantly fluctuating he may, if he be both shrewd and lucky, buy more cheaply and sell more dearly than his competitors, but this is through taking advantage of fluctuations, rather than through creating them. Secondly, the rents he must pay for pieces of land and the rates of wages and of interest he must pay for his labour and capital are determined by general conditions and are largely beyond his control. This does not mean that it is not possible for an employer, sometimes, to take advantage of the inertia of his work people to cut wages, but merely that if he does so while wages paid by other firms remain as before he will begin to lose his best men even if he does not precipitate a strike. In general entrepreneurs must pay current rates for the factors of production they employ. Although limited in these two particulars, the entrepreneur enjoys full independence in deciding what goods he shall produce, what quantity he shall produce, and by what methods he shall produce.

The Power of Substitution

§ 99. Of all the liberties of the individual in industrial society, the most precious is the liberty to substitute one thing for another or the *power of substitution.* At present we are concerned with this power as exercised by entrepreneurs. The substitutions open to them are of two kinds. First, there are substitute uses to which the different factors of production may be put. Pieces of land may be used for different crops or building sites, workers may be employed at different tasks, and capital goods, except those that are highly specialised, may be made to aid production in different ways. In general entrepreneurs tend to devote each particular factor to that use in which it affords the largest return. Second, there are substitute com-

binations of the factors of production that may be made for the accomplishment of the same productive purpose. For example, dirt may be moved by many men with little capital in the form of hand shovels or by few men with much capital in the form of steam shovels. Shoes may be made largely by hand or largely by machinery. A given crop may be raised on one piece of land without capital in the form of special fertilisers or on another with fertilisers. In deciding between these and alternative combinations entrepreneurs tend to choose the ones that are cheapest in the given situations.

The Source of Profits above the Wages of Management

If all changes were suspended entrepreneurs would use their power of substitution until each factor was assigned to that branch of production in which it afforded the largest return and until in each branch of production just that combination of factors was made which was found to be most economical under the given conditions. As a result industrial society would be brought to a state of normal equilibrium. All prices would be stable; production, distribution, and consumption would follow each other with undeviating regularity, and the profits of entrepreneurs would just cover their wages of management. In actual industrial society, far from being suspended, changes are of frequent occurrence. Prices are unstable; new goods are invented and put upon the market; methods of producing old goods are improved, and the supplies of the factors of production increase or diminish. Each one of these changes causes a modification in the earnings of the entrepreneurs affected and gives rise to the extra gain or loss which we call net or competitive profits.

Price Fluctuations a Source of Profits

§ 100. One of the most frequent causes of profits or losses to entrepreneurs are unexpected changes in the prices of the goods they buy or sell. Such changes may be due to influences affecting the demand for such goods or their supply, or they may be the result of a rise or fall in the value of money, the medium in which prices are quoted. In the former case they affect chiefly the one good in which the entrepreneur is interested; in the latter they affect all goods and may be the cause of general prosperity or general depression.

Explanation

The way in which price changes affect profits is obvious. Every entrepreneur in making his calculations estimates that

he must pay certain prices for the materials, etc., that he uses and that he will receive certain prices for his products. If prices change after he has begun his business so that he has to pay more for his materials or so that he receives less for his products, the difference comes out of his expected profits. If, on the other hand, the prices of materials fall, or the prices of finished products rise, there is here an unexpected extra gain to be added to the profit which he counted upon receiving.

Efforts to Control Prices

Price oscillations have become such a familiar condition of competitive business, and the uncertainty they introduce into business calculations is so distasteful to conservative entrepreneurs, that many expedients are resorted to to confine them within the narrowest possible limits. Perhaps the most common are agreements among producers to maintain prices for a specified period. Such agreements range all the way from verbal understandings which may be broken by simple notice on the part of one of the contracting parties, to formal combinations which substitute monopoly for competition as the regulator of prices. To be effective the latter must be supplemented by machinery for curtailing or enlarging production so that the supplies offered at the established prices may always just satisfy the demand. As forms of monopoly such combinations are discussed in later chapters.

The Consequences of the Failure of Such Efforts

Although mere agreements as to prices lessen the frequency of fluctuations they do not lessen their extent. On the contrary their tendency appears to be to increase the violence of changes when they do occur. The rise or fall in price which in the absence of any agreement results from a number of slight modifications, is made, under the system of agreements, at one bound as soon as the agreement lapses or is broken and free play is again given to the pent-up forces of competition. In spite of this disadvantage entrepreneurs seem to find even temporary stability preferable to the constant oscillations of a freely competitive market, and price understandings between competitors ranging from the familiar pools of the stock market to agreements among producers of materials such as coal and iron ore, and of agricultural products, such as fruit, are becoming more and more common phenomena.

Dealings in "Futures"

Another expedient for minimising price fluctuations is dealing in "futures." Entrepreneurs who wish to eliminate as far as possible from their business the element of uncertainty contract ahead both for the materials they are to use and for the sale of their own products. This practice has become especially marked in the building trades and in connection with different branches of iron and steel production. Building contractors, for example, before making bids on the erection of structures, secure options at certain prices for the delivery of the materials they will require. They then make their estimates with full knowledge in regard to the cost of these materials. If their bids are accepted the only uncertainties involved in the venture attach to the accuracy of their estimates of the quantities of materials required and of the expense of labour. Similarly in the iron and steel business it is customary for manufacturers to contract ahead for materials at the same time that they book orders for their products months in advance. The tendency of dealings in futures is to assign to a particular class, namely, to those who have a special talent and taste for forecasting price variations, the task of estimating the future conditions of demand and supply in each market and naming in advance the prices which competition will tend to establish. The more accurately this class makes its calculations, the more perfectly will its operations cause the present price of each good to adjust itself to the price to be established in the future. The best illustration of this in the United States is furnished by transactions on the produce exchanges.

Dealings in Futures Illustrated by Reference to Wheat

§ 101. It has become customary in all large cities for produce brokers to make contracts for the delivery of the great staples, corn, wheat, cotton, etc., three, six, and even nine months in advance. As this is being written (December, 1901) wheat is being dealt in for December, May, and July delivery. The United States has harvested an unusually small corn crop and in consequence the prices of the grains are rather more unsettled than is usual at this season of the year. The general impression is that the price of wheat will be favourably affected by the scarcity of corn and the question that brokers are trying to solve is how great a rise in price may be looked for from this cause. The wheat available for May delivery has already

been harvested and its amount can be estimated with a fair degree of accuracy. Between the end of May and the end of July new wheat will find its way to the market, and this is a factor to be reckoned with. Figuring on these data and any others that they can secure, wheat operators make their estimates in regard to probable price movements. They decide in their own minds what prices will prevail in May and July and buy or sell accordingly. Suppose that an influential group of operators accurately foresees that a much higher price must prevail in May than prevails in December. Their course will be to buy wheat for May delivery and to continue to buy it as long as there is any margin between the price they anticipate and the price at which others are willing to contract to deliver it. But all wheat stored in elevators in December is potentially wheat for May delivery. It is a simple calculation to subtract the fee for storage and the interest on the capital invested to determine what price such wheat should command in December to correspond with a given May price. As the May price rises the December price must, in the absence of some extraordinary condition, rise also. It follows that by forecasting accurately the higher price to prevail five months hence the operators have helped to advance the present price of wheat. As the price rises present consumption will be curtailed somewhat and more wheat will be set aside for future use. This additional wheat will figure as part of the May supply and should lead the operators referred to to reduce somewhat their estimate of the May price. The lower price for wheat for future delivery will be reflected back to present or cash wheat and will depress its price. In this way by means of calculations which constantly require revision operators in futures tend to adjust the present to the future price and to narrow the range of price oscillations.

The Economic Function of Speculation

Some of the shrewdest and best-informed men in the United States find it profitable to devote much of their time to studying the conditions of supply and demand with reference to each of the great staple products. They make mistakes in their calculations of course, and very often buy or sell for future delivery at prices widely different from those which actually prevail when the future time arrives. But they are less apt to

make mistakes than men who are without their special talent and training, and on the whole their operations have a decidedly steadying influence on the prices of the commodities in which they deal. Even more important is the service they render in assuming risks in regard to price changes which otherwise all entrepreneurs would have to share and in making it possible for conservative producers to know just what prices they will have to pay for needed materials months before they have occasion to use them.

Speculation *vs.* Gambling

Not a little criticism has been directed against dealings in futures on the ground that such transactions are highly speculative. This cannot be denied, but it must be remembered that it is not merely the dealings in futures, but the future itself, that is uncertain. If such dealings can be confined to the men most competent to make accurate predictions, their tendency will clearly be to lessen the uncertainties of business. The operations of such men prepare the whole business community for changes that are inevitable, long before less observing people see any reason for them. Unfortunately the question of the social expediency of dealings in futures is mixed up with the wider question of the expediency of stock and commodity speculation as it is now carried on in the financial centres of the country. It is notorious that this speculation is not confined to men who make it a business and are trained for it in the hard school of experience, but that it is also indulged in intermittently by a great army of men and women whose only qualifications are a taste for gambling and the consciousness of having money to invest. To the extent that these uninformed speculators accept the leadership of men of sound judgment and wide experience, their presence simply increases the influence which such men can bring to bear when they deem imminent a change in prices. Too often, however, the mob follows after some false prophet and makes him more of a power for evil than he could be if he had only his own wealth to misdirect, or is deceived by some sagacious but unscrupulous operator who circulates false reports designed to cheapen what he wants to buy or to enhance in price the things he wants to sell. In either case its influence is altogether pernicious. How to confine speculation to those who have aptitude and training for it and

to discourage stock and commodity gambling is one of the economic problems of the day.

Conclusion

The general conclusion of this section is that price fluctuations are an important source of profits and losses in the United States, but that the tendency seems to be towards developing a special class of entrepreneurs who take the risks of price changes and enjoy all the profits or suffer all the losses to which they give rise. In ordinary times losses due to price fluctuations are likely to offset gains traceable to this cause. Such fluctuations make little difference in the earnings of entrepreneurs considered collectively, although they are so potent in assigning profit to some and loss to others individually.

The Influence on Profits of Rising Prices

§ 102. In addition to oscillations in the market prices of particular articles, there are general price movements which affect all business. When money prices generally are rising all entrepreneurs are in the happy situation of receiving more for their goods than they expected. They have paid or agreed to pay for materials and factors of production prices and rates adjusted to lower price conditions. Any increase in the prices they obtain for their products affords an extra or net profit. The usual effect of such a situation is to stimulate enterprise. Everyone in business for himself is making money and all but the most conservative want to enlarge the volume of their businesses so that they may make more. Entrepreneurs eagerly compete with each other for control over the factors of production, and by this competition rents, wages, and interest are advanced until prosperity appears to be general. To illustrate, suppose the different branches of production are represented by the letters A, B, C, D, etc. In all these industries profits above the wages of management are being received. Entrepreneurs in industry A are encouraged to enlarge the producing capacities of their plants and to enter the market as hirers of labour and borrowers of capital. But the number of workmen and the supply of capital goods are not to be increased at will. To employ more labour and capital at A means normally to draw them away from B, C, and D, and this can be done only by offering higher wages and higher rates of interest. But at B, C, and D, there are similar inducements to

enlarge production. Rather than lose workmen or capital goods, entrepreneurs in these industries will offer still higher wages and interest. This competition will continue as long as there is any extra profit in any line of competitive business to induce it. Unless prices continue to advance to ever higher levels the rising expenses of production will presently cut down the margin of profit until it again amounts only to the wages of management to which entrepreneurs are entitled. Such bursts of prosperity, if unaccompanied by an actual increase in the net product of goods, benefit entrepreneurs at the expense of the other sharers in distribution, whose money incomes increase less promptly than the prices of the goods they consume. As a rule, however, one effect of rising prices is to furnish more active employment for all of the factors in production and to cause a correspondingly enlarged output of goods. In time this increased volume of goods will be available for consumption and then the prosperity begins to have a solid basis in the increased well-being of all classes in the community.

Of Falling Prices

A period of falling prices affects industrial relations in an exactly opposite way. Instead of receiving profits in excess of their wages of management, entrepreneurs now experience losses. To reduce these as far as possible, they tend to reduce the volume of goods which they produce and to curtail the expenses of production. Either by discharging workmen and failing to renew capital as capital goods are worn out, or by cutting down rents, wages, and interest rates, entrepreneurs compel other classes to share their losses with them. Unless the fall in prices continues, it will not be long before the expenses of production are scaled down by these measures to a point which again permits entrepreneurs to enjoy wages of management commensurate with their abilities. In this case the depression, in the sense of diminished well-being, will be merely apparent until it causes an actual curtailment of the net product. During the short interval that business is continued on the same scale in the hope that the drop in prices will prove to be only temporary, what entrepreneurs lose will be gained by other sharers in distribution, whose money incomes now mean larger command over consumable goods.

Alternations between Prosperity and Depression in the United States

In the United States, even more than in other countries, great importance must be ascribed to alternating periods of prosperity and depression as sources of profit and loss. To refer only to recent years, from 1893 until the summer of 1897 conditions were such that the majority of entrepreneurs found it barely worth while to continue in business, while a great many were unable to do so. During the four years, 1893 to 1896, the number of failures in the United States aggregated 57,412, with total liabilities amounting to $919,065,629. Since the summer of 1897, on the other hand, business has been in a flourishing condition and there is every indication that the profits of entrepreneurs have been large. During the four years, 1898 to 1901, the number of business failures was only 43,299, and what is even more significant, the total liabilities were only $473,130,837, or little more than half those for the previous years. Of course in each period there were some entrepreneurs who for special reasons were making profits while others were losing, but the general experience was as described. The cause of these alternating periods of prosperity and depression cannot be understood until we have considered the subjects of Money and Credit in Chapters XVII. and XVIII.

The Influence of Discoveries and Inventions on Profits

§ 103. Entrepreneurs who discover, invent, or make available new and more economical means of want satisfaction are among the greatest benefactors of the race. It is through their efforts that the consumption of a people gradually adjusts itself to the productive capacities of the environment. Examples of such innovations are legion. Of late years in the United States bananas have been introduced on a large scale as a cheap and wholesome supplement to the cereal foods of the temperate zone. At the same time, dozens of varieties of cereal foods have been invented, which preserve the nutritious elements in the grains more fully than the white wheat flour which they serve in a measure to supplant. In the domain of transportation, bicycles and trolley cars have already largely superseded horses, and they in turn are beginning to be superseded by automobiles. Other recent inventions of far-reaching importance are the telephone, the linotype, and the typewriter. In connection with each of these innovations and thousands of

others introduced during the last thirty years, large profits have been made either by the inventors themselves or by entrepreneurs who have made the inventions commercially successful. Often these new goods or the methods of producing them have been patented and the profits arising from them have been in the nature of monopoly profits. In other cases they have been kept secret for a time. Even when they have been from the first open to competitive production, however, it has taken time for the supply to become so adjusted to the demand that the price has left no margin for extra profit for the enterprising pioneers.

Increased Profits of Some Entrepreneurs Offset by Diminished Profits of Others

In estimating the extent of the profits enjoyed by entrepreneurs as a whole in consequence of the introduction of novelties, two substantial deductions must be made. In the first place few if any new goods are offered for sale which do not attract purchasers from other goods. Even novelties which do not directly supersede other goods previously used for the same purpose, cause substitutions which are detrimental to the interests of other entrepreneurs. Thus the introduction of the bicycle is said to have interfered with the business of watch manufacturers in the United States. In a similar way the introduction of the trolley car led to the shutting down of more than one horseshoe-nail factory. From the large profits of entrepreneurs who produce and sell successful novelties, must be deducted the losses of entrepreneurs whose businesses suffer because novelties are put on the market. The second deduction is for losses incurred by inventors and entrepreneurs who try to make a success of novelties which are not appreciated by the consuming public. Millions of dollars are spent every year in the promotion of discoveries and inventions which are complete failures from the business standpoint. In a country like the United States, where entrepreneurs are willing to assume large risks in the hope of large gains, it is not at all unlikely that more is lost each year in the effort to find a market for unsuccessful novelties than is made in connection with those which succeed. The net profit to entrepreneurs collectively from the production of novelties is, for this reason, smaller than most people imagine.

§ 104. Quite as conspicuous in a progressive country as

profits from novelties are profits from improved methods of production. Every entrepreneur is constantly on the alert to improve his methods of production and in this way to reduce his expenses. Consider, for example, the situation of farmers. The prices they are to get for their products and the rents, wages, and interest rates they must pay are determined by general market conditions. If they are to make more than mere wages of management they must improve on current methods of cultivation. By treating the land in a different way, using new fertilisers, organising their labour force better, or buying superior kinds of agricultural machinery with their capital, they may accomplish this result. As their expenses of production are reduced, a larger or smaller margin is left as an extra profit or reward for their enterprise. But such improvements soon become matters of common knowledge and common practice. Other farmers imitate them, and in time they become the methods of representative farmers generally, whose expenses have a determining influence on prices. The extra profit which was for a while enjoyed disappears either because prices are lowered or because wages, interest, etc., are raised, or because both changes co-operate in adjusting prices again to the expenses of production. Sometimes the new methods of production are kept secret so that they do not become general; at other times they are protected by patent. Either event gives rise to a temporary monopoly and to a special monopoly profit which may be enjoyed as long as the monopoly continues.

The Influence of Improvements in Methods of Production on Profits

To manufacturers the importance of new methods is even greater than to farmers. Producing usually on a larger scale and employing more capital of diverse and complex forms manufacturers find fullest scope for any originality or enterprise which they may possess. Improvements in the tools and machines used, in the form of division of labour employed, and in the efficiency with which natural power, labourers, and capital goods are co-ordinated and made to work together towards the common end, are introduced in succession. Each improvement curtails the expenses of production and insures to the entrepreneur adopting it a temporary profit. If he can keep the new process secret or have it patented, he may enjoy a

The Process by which Profits are Eliminated

monopoly profit for some years; otherwise it soon becomes a matter of common knowledge and is adopted by one competitor after another until the old process is rendered obsolete. In time expenses of production and prices are again brought to a parity and the extra profit is eliminated.

Change a Cause of Profits

As the above analysis suggests, profits which are not monopoly profits are soon overtaken and eliminated by competition. If improvements were to cease profits from this source would soon cease also. In progressive communities they continue to be an important element in the wealth annually divided among the sharers in distribution because improvements follow each other so swiftly that for every extra profit that is cut off by competition other extra profits due to more recent innovations are substituted.

Profits and Losses the Normal Consequences of Progress

The same process which cuts down extra profits as the new methods upon which they depend are more and more generally used, inflicts loss on entrepreneurs who have not the intelligence or enterprise to adopt them. Their expenses of production remain stationary or even increase, and in consequence they incur losses as the competition of progressive entrepreneurs forces prices down to the new cost level. From this it follows that the extra profits of the progressive are usually offset before they disappear by losses on the part of the plodding and unprogressive. It is for this reason that business failures are more common in the most progressive and on the whole prosperous countries than in those where old methods are adhered to and innovations are frowned upon. In the former competition is more strenuous and the relatively unfit are more promptly eliminated.

The Influence of the Variableness of Climate on Profits

§ 105. All industries which depend upon climate, rainfall, the direction and velocity of the winds, or other variable manifestations of nature show irregular returns from year to year, and these irregularities count as profits or losses to entrepreneurs. The variable profits of the farmer from this cause are familiar to everyone. He invests capital in the cultivation of his land, paying rent, wages, and interest at rates determined by general market conditions. In making his calculations he assumes that he will realise at least an average crop. If it prove to be a good year the crop will be larger than the average

and he will receive for it enough to cover the expenses of production and to leave a comfortable margin for profit. In a poor year, on the contrary, he may not only make less than his proper wages of management, but even lose some of his capital. Similarly dependent upon nature are cattle raisers, hunters, fishermen, navigators, and many others. In the case of each the variability of nature appears as a perennial cause of profits and losses.

Progress Diminishes Man's Dependence upon Nature

There is every indication that progress in the technique of production is gradually lessening man's dependence upon nature's moods even in the extractive industries. In farming increased ability to foresee weather changes, artificial irrigation, and a host of other improvements enable the cultivator to surmount natural difficulties which would at one time have been fatal to success. In water navigation even greater advances have been made, since steam vessels are now well-nigh indifferent to all but the severest storms. This progress will doubtless continue, but for many generations the industries which at some points depend upon variable nature will show profits or losses as natural conditions are favourable or the reverse.

Insurance as a Means of Escaping Consequences of Changing Natural Conditions

In connection with the variability of natural conditions a special kind of business has grown up, that of insurance. Experience has taught that even the most unusual occurrences, such as the number of suicides in a given month, follow each other with considerable uniformity year after year if a large group of individuals is considered. Any accident to which a large number of persons are liable, and which can be confidently predicted as likely to befall a certain proportion each year, offers a field for insurance. If all of the persons exposed to the accident can be induced to contribute *pro rata* to an insurance company, sufficient sums to make good the loss to those who actually experience it may be accumulated. By means of insurance losses which formerly fell with crushing force upon individual entrepreneurs may now be changed to one of the items in the normal expense of production for all.

Profits and Losses Tend to Balance Each Other

If a general view of profits and losses due to the variableness of nature be taken, it appears probable that over a series of years they will about balance each other. A period of favourable conditions is likely to be followed by a period when

nature seems adverse. Moreover, profits in any given industry soon invite expansion and cause their own extinction, unless it is clearly perceived that they no more than make up for losses in the same industry in other years. From this cause should the balance turn for any considerable period towards the profits side, forces would be set in operation tending to restore the equilibrium and to make profits and losses in each industry offset each other.

Profits and Rent

§ 106. In a comparatively new country like the United States an important source of profit is the exploitation of virgin land and new mineral and other natural resources. As these resources are opened up and their value is demonstrated the incomes to which they give rise become subject more and more to the principles determining rent. During the early stages of exploitation, however, they are too irregular and uncertain to be classified as anything else than profits to the enterprising entrepreneurs who devote time and means to their development.

Profits in a New Country Usually in Excess of Losses

Profits from this source in a progressive country are sure to exceed largely losses due to misdirected investments. At the same time it is a debatable question whether in some highly speculative ventures concerned with the exploitation of new resources, such as gold mining, more wealth has not been wasted in the fruitless attempt to develop paying mines where nature has created none, than has been returned in profits and rents to the fortunate entrepreneurs who have made rich strikes. There is a fascination about searching for mineral wealth, and especially for gold, that attracts men and capital out of proportion to the likelihood of success in such enterprises, and though it may not be true as often alleged that every pound of gold in existence has cost on the average more than it is worth, this certainly approximates the truth.

Practical Problem Connected with Profits Due to Exploitation of Virgin Natural Resources

The large element of chance that figures in the determination of profits from the development of new regions, makes economic desert of less moment here than in connection with other species of profit. This is particularly true in connection with the mining industry, which presents numerous examples of able men toiling through their whole lives for a scanty and precarious subsistence, while others, having neither ability nor

training, acquire great wealth. There can be no question that it would be to the advantage of industrial society, if the returns to entrepreneurs in these industries could be equalised without lessening the motives which encourage their activity and enterprise. Society could hardly undertake to share the losses of those who make unwise investments, as this would put a premium on folly, but it has been argued that society may properly share the profits of those whose ventures are successful. Just how this might be done has not yet been clearly explained by advocates of the policy.

The Influence of Changes in the Other Shares on Profits

§ 107. In the foregoing analysis it has been assumed that the rents, wages, and interest rates that entrepreneurs must pay are fixed by general market conditions and may not be changed by individual entrepreneurs. This is true in so far as general market conditions remain stable, but when these are changing, as they usually are in developing countries, when new lands are being brought under cultivation, when the population is growing, and when capital is increasing, then rents, wages, and interest rates must change too, and there is opportunity for enterprising entrepreneurs to hasten or resist general tendencies and in this way to secure for a time profits above the wages of management. A few examples will indicate how profits may arise from these sources.

The Effect of Falling Rents

One change that has been going on in the United States for several generations is the lowering of agricultural rents in the Eastern States as new lands have been developed in the West. Aggressive farmers of rented farms have taken the initiative in demanding better terms as economic conditions have made a fall in rents inevitable. By so doing they have avoided the losses that their less progressive neighbours sustain by consenting to renew their leases on the same terms as before. In other sections where rents are rising the more aggressive tenant farmers refuse to pay more until actually compelled to, and in this way keep their expenses below those of their more tractable neighbours.

The Effect of Changes in Wages

Similarly there have been general movements in the wages that competition secures to different grades of labour. When wage rates are rising, it is usually possible for some entrepreneurs to resist the movement for a time and in this way to

keep down their expenses, without losing any considerable number of their employees. Eventually they must accept the higher rates or lose their men, but during the interval that they refuse to do so, they may reap an extra profit. On the other hand, aggressive entrepreneurs lead the movement to reduce wages when rates are tending downwards and may in this way cut down their expenses sooner than their competitors, who receive no higher prices than they do for their products. In agreements as to rates of interest there is less chance for overreaching because those who lend and those who borrow are about equally conversant with the conditions. At the same time even here some entrepreneurs gain an advantage when rates are changing by making better terms than their competitors.

In all of these cases prompt adaptation to favourable conditions or grudging acceptance of unfavourable changes only at the eleventh hour, give rise to profits. Failure to cut down expenses as occasion offers or too ready acquiescence in rising expenses may, on the other hand, cause losses. Taken as a whole profit and loss accounts under these heads are likely to about offset each other for entrepreneurs collectively.

Summary

§ 108. To sum up what has been said in reference to the different sources of profits, it has been shown that their presence as important shares in distribution is due to the fact that changes are constantly occurring and that it takes time for competition to adjust economic relations to changed conditions. The more important changes from which profits or losses arise have been described as price fluctuations, which may affect only particular commodities or the prices of things generally, the introduction of new goods, improvements in the methods of producing old goods, variations in climatic and other natural conditions, the opening up of new lands and natural resources, and modifications in the rates of remuneration that must be paid to the factors of production, or to those who control them.

Conclusion

If industrial society is progressing and if in each period there is more wealth to be divided among the sharers in distribution than in the preceding period, a large part of the increase will appear temporarily as extra profits going to entrepreneurs. In the same way, when industrial society is retro-

gressing the loss falls first upon entrepreneurs. Theirs is the elastic share that increases or diminishes readily in response to changed conditions. But whether the net balance happens to be above or below the wages of management, competition among entrepreneurs themselves is a force which tends constantly to make their gains correspond to bare wages. Profits stimulate them to bid against each other for the factors of production and to raise rents, wages, and interest rates until expenses and prices are again equal. Losses lead them to contract production and cut down expenses until in this way equality is restored. Thus, however large profits or losses may be at any given time, they are always in process of extinction, always, that is, unless monopoly influences intervene and prevent the forces of competition from accomplishing their work of elimination.

REFERENCES FOR COLLATERAL READING

**Marshall*, Principles of Economics, Book VI., Chaps. I., II., VII., and VIII.; **Walker*, Political Economy, Part IV., Chaps. I. and IV.; **Pierson*, Principles of Economics, Vol. I., Part I., Chap. V.

CHAPTER XI

DISTRIBUTION: MONOPOLY PROFITS

The Nature of Monopoly

§ 109. Monopoly means usually in economics such control over the supply of an economic good as enables the monopolist to regulate its price. This regulation is of course never absolute. It must always have regard to the conditions of production and the extent and elasticity of consumers' demand. Within certain limits, however, if there is a real monopoly, control is effective and may give rise to monopoly profits.

Distinction between Monopoly and Differential Advantage

A distinction which it is important to note at the outset is that between monopoly and differential advantage. In nearly every branch of competitive business differential advantages are found. In farming one producer of wheat uses better land than another producer. In manufacturing one mill owner utilises a superior source of water power. In all pursuits competitors are themselves differently endowed, some being more capable than others and receiving larger returns, although all sell the same goods in the same markets at the same prices. Although important sources of income such differential advantages are not the cause of monopoly profits. The fact that some pieces of land and some sources of power are better than others, does not prevent an active competition between farmers and manufacturers which serves to keep prices down to the expenses of production of representative firms. Equally ineffectual as a bar to active competition are the personal differences between men. The consideration of the influence of these differential advantages upon the distribution of incomes, belongs under the head, not of monopoly, but of rent and wages. Only when competition is suspended and one firm or a combination of firms secures such control over the supply that it may regulate the price, does monopoly appear. Its essence is control over the supply and its surest indication is regulation of prices.

The above definition of monopoly refers to producers' or sellers' monopolies, the species that is most familiar to the business world. Contrasted with it are buyers' monopolies, which rest upon control over demand and regulation of prices from that side. In practice buyers' monopolies have been so unusual that they merit no extended consideration in this chapter. Buyers' Monopolies

§ 110. The following are the principal classes of monopolies which are of interest to the economist: (1) personal monopolies; (2) legal monopolies, which may be, (a) public or (b) private; (3) natural monopolies of situation; (4) natural monopolies of organisation; (5) capitalistic monopolies; (6) labour monopolies. The Kinds of Monopoly

A personal monopoly arises when one individual controls the supply of a given good either because he possesses unique talent (*e. g.*, an artist's monopoly of his own works), or because he uses a secret process so superior to all other processes that he is able to drive all competitors from the field. A legal monopoly is one based upon some law or governmental regulation. Examples of public legal monopolies are furnished by the tobacco monopoly of France, the salt monopoly of Saxony, and the post-office monopoly of the United States. The most familiar private legal monopolies are those based on patents, copyrights, and exclusive franchises. Natural monopolies of situation are of two kinds: those due to social and those due to physical conditions. Of the first kind are the monopolies which the single village blacksmith and storekeeper enjoy until competitors enter the field. More important are monopolies of the second kind, which depend upon some physical limitation in the sources of supply of the goods controlled. Of this type are businesses using unique mineral springs or mountain passes, or controlling the whole areas from which certain commodities, such as diamonds in Africa or anthracite coal in the United States, are obtained. Natural monopolies of organisation are businesses which obey a law of diminishing expense, no matter how large the business becomes. Such are the railway and businesses concerned with the distribution of letters, telegrams, parcels, gas, water and electrical power. Capitalistic monopolies are those which result from the un- The Importance of Different Kinds of Monopoly in the United States

hampered power of large aggregations of capital and are represented in the United States by the so-called trusts. Labour monopolies are monopolies resulting from combinations of skilled workmen able to control the supply of the economic good, labour.

Monopoly *vs.* Competitive Industry

When all of the businesses in a country like the United States which may properly be classed under one or other of the above heads are considered, the importance of monopoly is more likely to be exaggerated than underrated. Personal monopolies are encountered in connection with all artistic and professional work. Although not usually the ground for very large incomes in individual cases, they exert in the aggregate a considerable influence on the distribution of wealth. Secret processes are not at present the source of very great monopoly returns for the simple reason that those who control such processes usually prefer to have their monopolies confirmed by patent. The number of patented processes now used in connection with business enterprises may be inferred from the fact that from 1837 to 1900 the United States issued as many as 675,561 patents. Although the monopolies to which patents give rise are only temporary, in a country in which processes are so soon superseded as they are in the United States, they serve to give a monopolistic character to nearly every branch of manufacturing business. Businesses enjoying exclusive franchises are less common, but on the other hand they include some of the branches of production that are most vital to the general well-being such as water, gas, and street railway companies. Natural monopolies of situation are not as yet very important, but they appear to be on the increase. A few years ago the suggestion that a single corporation could monopolise the iron-ore and coking-coal resources of the United States would have been greeted with incredulity. Such a consummation has not yet been realised by the Steel Trust, but its progress in that direction must make economists hesitate to impose any limits upon the possible development of natural monopolies of this type. The importance of natural monopolies of organisation, which embrace the chief transportation businesses of the country, can hardly be exaggerated. Upon them all other businesses are vitally dependent, and this dependence increases

rather than decreases as production becomes more concentrated and the division of labour is made more minute. Finally, the capitalistic monopolies, and the labour monopolies, which are among the latest fruits of the country's industrial development, merit all of the attention that has been accorded to them. If these various monopolies were quite unhampered in their control over the prices of the goods they produce the present might well be styled the age of monopoly rather than the age of competition. But such control is subject to very important limitations, with the result that monopoly is more of a form than a reality for the greater number of the businesses that have been enumerated.

Limitations on the Power of Monopolies

§ 111. The most important limitations on the power of a monopolist to regulate prices are three: (1) the possibility open to buyers of substituting other goods for those which are monopolised, (2) the possibility of competition which may deprive the monopoly of its control of the supply, (3) the possibility of legal interference. Taken together these three limitations confine the price-making power of monopolies within rather narrow limits and explain the fact that the practical operation of monopolies is so much less harmful to the interests of consumers than contemplation of the nature of monopoly would lead one to expect.

The Power of Substitution

The limitation imposed by the power of substitution depends upon the range of substitute goods open to buyers. A few examples will make this clear. Suppose that the monopolised good is a particular kind of wine. Substitutes for it are all other kinds of wine, all other kinds of liquors, even all other kinds of comforts and luxuries so far as wine itself is in this category. An attempt to increase the price would under such circumstances greatly reduce the amount of wine of the particular brand that could be sold. Unless it had especially endeared itself to the palates of consumers, a comparatively small increase in its price would spoil its market. The attempt to double the price might even divert the entire demand to other goods. In such a case the effort to win more than a small margin of monopoly profit from consumers would be fatal to the interests of the monopolist.

Again, suppose refined sugar to be the monopolised product.

Sugar an Example

The customary price for this good is so low as to encourage its general consumption, and it is now looked upon by nearly everyone as a necessary of life. Moreover, substitutes for it, such as raw sugar, molasses, maple syrup, etc., are few and unsatisfactory. The range for substitution is so narrow in this case that the monopolist may make considerable changes in the price without seriously affecting the demand. In fact, if the price is raised the demand for other articles is more likely to be curtailed than the demand for sugar itself. Under such circumstances the conditions as regards the possibility of substitution are peculiarly favourable to monopoly profit. Fortunately for consumers they are less favourable, as is indicated below, as regards the possibility of competition.

Substitution in Connection with a Railroad

Take, finally, the case of a railway which furnishes the only available outlet to the market for a given district. Its rate-making is not controlled by competition in the ordinary sense, but its patrons have always the alternative of not prosecuting the industries whose products must be shipped to the distant market. Their power of substitution is that between producing for rail shipment and devoting their land, labour, and capital to other production. In practice this is a very important limitation, since the economical administration of a railway demands a large volume of traffic, and a road cannot afford to make its rates so high that only a few trains will be run over its costly roadbed each day. At the same time in many localities this limitation is not sufficient to insure reasonable rates, and legal interference has been found necessary to protect the interests of the public.

Potential Competition as a Check on Monopoly

The possibility of exciting competition and losing control of the supply is an ever-present danger to capitalistic monopolies and in less degree to personal and natural monopolies of organisation. This has been illustrated over and over again in connection with trusts in the United States. An example is furnished by the history of the sugar trust. "In 1887 the Trust was formed. The margin of profit was immediately raised more than half a cent a pound, at times even fully one cent a pound. . . The margin fell again in the latter part of 1889. This was owing to the fact that large competing refineries, especially those built by Claus Spreckels at Phila-

delphia, had entered the field. For rather more than two years, while this vigorous competition continued, the margin fell back to a point substantially as low as had existed before the formation of the Trust. In February, 1892, the Trust bought up the competing refineries and the margin was at once put back to the non-competitive height. From the years 1892 to 1898 the margin remained, relatively speaking, high. . . In the latter part of 1898 vigorous competition against the American Sugar Refining Company (the reorganised Trust) began on the part of Arbuckle Brothers, Claus Doscher, and others." * Similar examples might be cited from the histories of combinations in other industries showing that competition is an ever-present possibility that has to be reckoned with by the managers of capitalistic monopolies.

The Case of the Single Village Store

That the possibility of competition is a limitation on the monopoly of the village blacksmith, the village grocer, etc., is too obvious to require discussion. So long as these business men keep their charges down to fair wages of management for themselves their monopoly of these businesses may be undisturbed. Let them increase their charges, however, or let the village grow until there is employment enough for two in these lines, and a competitor is sure to appear. This does not mean that such men may not enjoy monopoly profits from their situation, but that they must be cautious in increasing their charges at the risk of losing their monopolies.

Competition in Connection with Railroads

Natural monopolies based on the law of diminishing expense are subject to the same check. For example, in the railway business, while it is true as a general statement that one company can carry freight and passengers between two points more cheaply than could two companies dividing the traffic between them, it is also true that the difference is not so great that unduly high rates charged by the first company will not induce capitalists to construct a parallel road to compete for the business. Such competition is almost always uneconomical from the social point of view, but the history of railroad building in the United States is full of evidence to show that it frequently springs up and acts as a limitation on monopoly.

* Jenks, *The Trust Problem*, pp. 136–138.

The Fear of Governmental Interference a Check on Monopoly

The last limitation referred to, that is, the possibility of government interference, applies especially to natural and capitalistic monopolies. In the case of the former it is coming to be recognised more and more fully that competition cannot be relied upon to regulate the businesses affected and that government interference or government regulation is the only alternative. How far this conviction has found expression in law is considered in Chapter XXIV., in connection with the discussion of efforts to regulate railways in the United States. Government interference with capitalistic monopolies or trusts has been attempted also in the United States through the so-called anti-trust acts considered in Chapter XXV.

Conclusion in Reference to Efficacy of Checks

Summing up these considerations in reference to limitations on monopoly, we may conclude that the possibility that other goods may be substituted for the monopolised product applies to all monopolies, but with a force varying in each case with the range of substitutions open to consumers. The possibility of competition threatens all except personal monopolies of ability, legal monopolies, and natural monopolies of location. Legal interference, finally, has actually been applied to natural and capitalistic monopolies. These three limitations serve as effectual checks on the reckless exercise of monopoly power. Only when the range of substitutions open to consumers is narrow and the obstacles which competitors must overcome, in order to enter the field, formidable, does monopoly present a serious problem or is legal interference necessary.

The Law of Monopoly Price

§ 112. Monopolists, so far as they are free to obey the dictates of self-interest, tend to fix those prices for their products which will yield the largest monopoly profits. The various circumstances which determine what these prices are may be made to appear from a few typical examples.

A Patented Brand of Soap as an Example

As the simplest case let us take a patented article in general use such as a special brand of soap and assume that the expense of producing and selling such soap is five cents a cake irrespective of the amount sold. According to the familiar law of demand the price that may be obtained will fall as the quantity offered for sale is increased. In the case of a commodity like a special brand of soap this law is reinforced by the large range of substitutions open to consumers, and in conse-

quence the demand responds readily to changes in price. Suppose that the volume of sales at different prices, the gross receipts, and the monopoly profits over and above the expenses of production stand as follows:

Price	No. of Cakes Sold	Gross Receipts	Expenses	Profits
50¢	100,000	$ 50,000	$ 5,000	$ 45,000
40	130,000	52,000	6,500	45,500
30	200,000	60,000	10,000	50,000
25	400,000	100,000	20,000	80,000
20	600,000	120,000	30,000	90,000
15	1,000,000	150,000	50,000	100,000
10	2,500,000	250,000	125,000	125,000
9	3,000,000	270,000	150,000	120,000
8	3,500,000	280,000	175,000	105,000
7	4,000,000	280,000	200,000	80,000
6	6,000,000	360,000	300,000	60,000

Under these circumstances it is evident that lowering the price tends to increase the monopoly profits by successive additions until the price is brought to ten cents, but that further reductions below ten cents reduce the monopoly profits. Ten cents is thus the price which self-interest will lead the monopolist to establish.

Another Case

In the above case it has been arbitrarily assumed that the expense of production is constant for each unit of product no matter how many units are produced. A more probable condition for a commodity like soap is for the expense to decrease as the volume of production is increased, at least until a rather large output is realised. The following table conforms to this assumption:

Price	No. of Cakes Sold	Gross Receipts	Expense per Cake	Gross Expenses	Profits
50¢	100,000	$ 50,000	12¢	$ 12,000	$ 38,000
40	130,000	52,000	11	14,300	37,700
30	200,000	60,000	10	20,000	40,000
25	400,000	100,000	8	32,000	68,000
20	600,000	120,000	7	42,000	78,000
15	1,000,000	150,000	6	60,000	90,000
10	2,500,000	250,000	5	125,000	125,000
9	3,000,000	270,000	$4\frac{5}{6}$	145,000	125,000
8	3,500,000	280,000	$4\frac{5}{7}$	165,000	115,000
7	4,000,000	280,000	$4\frac{5}{8}$	185,000	95,000
6	6,000,000	360,000	$4\frac{1}{2}$	270,000	90,000

Upon the conditions assumed in this example, the monopoly profit shows a tendency to increase as the price is lowered until ten cents is reached. The profit at nine cents is exactly the same amount as the profit at ten cents. Below nine cents the profit begins to fall off, so a further lowering of the price is to be avoided. In this case, accordingly, the monopoly price lies between nine and ten cents.

Law of Monopoly Price Indicates the Limit of Price rather than the Actual Price

If the monopolist enjoys exclusive control of the monopolised good, he may fix the price at the point affording the maximum profit without fear of exciting competition. But few monopolists are so fortunately situated as this implies. Competition, even though not in active operation, is an ever-present possibility with which most monopolists must reckon. Prudence dictates usually a more conservative policy in reference to prices than that which would secure for the time being the largest monopoly profits. In the assumed cases the price of soap is likely to be fixed at something less than ten cents, in the expectation that the present loss in profits will be more than made good by the protection of the monopoly from future competition that it insures. In the same way fear of governmental regulation often checks the rapacity of monopolists long before such regulation is actually undertaken. The law of monopoly price thus indicates the extreme limit to which monopolists are likely to go in fixing prices and not necessarily the price that they will actually charge under the practical limitations which control their conduct.

Complications in Connection with Monopoly Prices

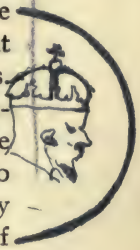
§ 113. In the case of many monopolised products, as has been pointed out by Professor Ely,* there are different strata of demand each controlled by somewhat different considerations. This also may be illustrated by reference to the demand for such a commodity as soap. Many consumers would prefer to pay fifty cents a cake for soap if they believed that by so doing they were getting a better article than their neighbours. Taking advantage of this fact, the shrewd monopolist of a particular brand of soap offers several different grades for sale at different prices. That intended for the mass of consumers is put out under the firm name simply, at the price —ten cents, say—calculated to afford the maximum monopoly

* *Monopolies and Trusts*, Chapter III.

return. Along with this is offered at a higher price—say, twenty-five cents—the same article, coloured a little differently or pressed into a different shape, which is designated, "superior." A dash of inexpensive scent and a more elaborate wrapper transforms "superior" soap into "superfine" and insures a limited sale at fifty cents a cake. In this way not only is a larger margin of profit secured on the supposedly better grades, but consumers are reached who would never think of buying plain, ordinary soap for the very reasons that recommend it to less fastidious people.

Practice of Asking Different Prices for the Same Goods Not Unusual

The practice of offering substantially the same goods at different prices is by no means confined to manufacturers of patented toilet articles. It is found in connection with nearly every kind of commodity that figures in personal consumption. Makers of bicycles and automobiles, manufacturers of patented foods and beverages, fashionable tailors and haberdashers, and many others recognise the opportunity for profit along this line, and conduct their businesses accordingly. The resulting complication in the theory of monopoly price is easily understood from what has already been said. Instead of making calculations in reference to consumers' demand as a whole, the monopolist makes special calculations in regard to the extent and the intensity of the demand of each class of consumers. He offers the "superfine" grade of his product at a price commensurate with the adjective used to designate it. The "superior" article is put on the market at a price calculated to attract the comfortable middle class, which appreciates quality but is not prepared to disregard altogether considerations of expense. Finally, a price is made for the simple article which will commend it to the rank and file of consumers who are comparing it with substitute articles and anxiously considering which is, on the whole, the best for the money.



Final Statement of Law of Monopoly Price

The law of monopoly price may be summed up in the maxim, ask that price which is calculated to yield in the long run the maximum monopoly profit. To decide what this price is in any given instance, the monopolist must gauge the extent and intensity of consumers' demand both as a whole and as manifested by different classes of consumers. He must then calculate his own expenses of production for different quantities of

the monopolised good. His first concern will be usually to put out the standard grade of the commodity he produces at a price that will afford the largest monopoly profit. This may be a high price, but if the demand is elastic it is more likely to be moderate or even low, especially if the expenses of production per unit diminish as the volume produced is increased. Having fixed the price for the standard grade, the monopolist will consider whether it would not be profitable to offer superior, superfine, or other grades to particular classes of consumers at higher prices. In connection with each grade he must make a calculation similar to that originally made, and he must also consider how the sales of these superior grades will react on the sales of the good of standard quality. Whether he will put out special grades and how many he will put out will depend upon the special character of the demand for his product.

Reasons for Concealing Monopoly Profits

§ 114. Monopoly profits have never been looked upon with favour in the United States. Even the suspicion that they were being enjoyed has sufficed often to disturb the conditions which made them possible, either because consumers have combined to boycott the monopolised good or because the Government has interfered. Under such circumstances it has been but natural for monopolists to devise numerous expedients for concealing their real earnings.

Methods of Concealing Monopoly Profits

For personal monopolies to deceive the public as to the profitableness of business activity is an easy matter, but it is less so for corporations with monopoly powers. However secretive the latter may be in regard to their methods of doing business, they are compelled on sharing their earnings among their stockholders to disclose the amount of these earnings to a number of persons. The stock of a small corporation may be so narrowly held that secrecy even in reference to dividends is possible, but this is rarely the case with large corporations. The latter can conceal their profits only by distributing them in other forms than dividends to stockholders, or by inflating their capitalisation so that large dividends may be paid without exceeding a moderate rate of return on the nominal capitalisation. A few words may be said about each of these methods. Directors may expend surplus earnings for additional equip-

ment, patents, or other property at greatly inflated valuations. By this means monopoly earnings are diverted to the owners of the properties purchased, who may be the directors themselves or their friends. This method may conceal the monopoly profits even from the stockholders, who continue to receive only moderate dividends. Somewhat similar, and even more common, is the practice of dividing monopoly profits among the higher officials of the monopolistic corporation in the form of large salaries. It is a familiar fact that monopolies are good employers. They frequently pay wages above the competitive rates even to their ordinary workmen. To some extent, and perhaps fully as regards the lower grades of labour, this policy is justified by the better service that it secures. It is not, however, confined to the ordinary grades of labour, but applies in extreme form to salaried officials. These men are in a position to bring influences to bear on boards of directors to have their salaries increased to much more than they could hope to earn if they were engaged in competitive industries. Sometimes they are themselves large stockholders in the enterprises which they manage; at others their knowledge of the business may be valuable to the corporation because they are in possession of secrets which it would be highly disadvantageous to have made public. To insure their continued loyalty to the interests of the monopoly they must be well paid for their services. On these and other grounds monopoly profits are often hidden in salaries much above what entrepreneurs directing competitive businesses could afford to pay for similar grades of service.

The Over-capitalisation of Monopolistic Corporations

The most common expedient of all for concealing profits is the practice of inflating the capitalisation of the corporation. Where a business is organised by shrewd men who foresee its monopolistic possibilities, it is usual to start with a grossly inflated capitalisation. In the railway business, for example, it has not been unusual to secure all of the capital required by the sale of bonds and to distribute the stock as a pure bonus. Industrial combinations as organised in the United States accomplish the same result by putting out preferred stock equivalent to the actual capital invested in the business and an equal or even larger amount of common stock as a bonus. In these

and other ways the nominal capital of an enterprise may be made from the first, two, three, or even five or ten times the amount actually invested in it. Such an arrangement permits directors to distribute very large profits as dividends on the nominal capital without exceeding the ordinary rate of interest.

Stock Watering

It often happens, even when large monopoly earnings are anticipated, that the nominal capitalisation is not made large enough to conceal them. In such cases, and in the more usual cases in which actual and nominal capitalisation start together, the practice of "watering" stock to conceal excessive earnings is frequently resorted to. This consists simply in issuing new stock for which no equivalent investment is required. It may be accomplished by means of a stock dividend, each shareholder being given an amount of new stock proportional to his original holding; or by the issue of new stock for subscription at a nominal price, subscriptions being open only to shareholders, directors, or other favoured investors. By these means the nominal capitalisation may be expanded to keep pace with earnings and to permit the distribution of the latter without any apparent increase in the dividend rate.

Difficulty of Measuring Monopoly Profits

The above ways of concealing monopoly profits have been resorted to so generally by monopolistic corporations in the United States that the casual student of the reports of some of the most successful of these enterprises would never suspect that their earnings were larger than those of competitive businesses. To show that they are so in fact requires a full knowledge of the operations of such corporations from the time they were first organised. In most cases such knowledge is confined to those most interested to keep it secret and in consequence it is rarely possible for an impartial investigator to determine what part of the earnings of a monopolistic enterprise represents a fair interest on the capital actually invested in it and what part monopoly profit.

Funded Income Defined

§ 115. One consequence of the policy of concealing profits is that the business community no longer regards nominal capitalisation as a fair criterion of capital value. It is so habituated to the practice of adjusting capitalisation to earning power that it readily accepts the latter as the real test of what the capital ought to be. Thus a business which earns $80,000 a year over

and above its expenses of operation, when the rate of interest on investments involving similar risks is 8 per cent., is taken to be worth $1,000,000, without much reference to the tangible capital invested in it. If the business is organised as a corporation with 10,000 shares of capital stock the shares will be quoted at $100. This procedure may be described as *capitalising income*. Income which is thus capitalised is sometimes spoken of as *funded income* to distinguish it from simple interest on capital invested in competitive industries. The monopoly profits of corporations are one, but by no means the only, type of funded income.

The Rôle of the "Innocent Investor" in Connection with Monopolies

The practice of capitalising income or of putting valuations on monopolistic and other sources of income in proportion to the returns which they afford, gives rise to vested interests in the established order. "Innocent investors" buy shares of stock in monopolistic corporations, paying for them prices proportioned to the monopoly earnings that are being realised, and then claim the protection of the government against reformers who characterise monopoly profits as *unearned* and advocate their confiscation. The advantage of this kind of support to promoters of monopolistic undertakings is so obvious that they not infrequently, especially in connection with local monopolies, make special efforts to insure the wide distribution of the stock of their companies in the localities to be exploited. If persons of light and leading in such places can be persuaded to become stockholders the likelihood of government interference as profits grow is greatly lessened. In time innocent investors may come to control entirely corporations of this character through the silent withdrawal of the original promoters to other fields. Under such circumstances the claim that the monopoly profits are no more than a fair return on their *bona fide* investments may be advanced by the stockholders with much force. Most of the older natural monopolies in the United States have already reached this stage. Any proposal to curtail their monopoly earnings by fixing the prices they may ask for their services or by requiring from them extraordinary contributions to the support of the state is met by the objection that they pay no larger returns to those interested than competitive businesses, and should therefore be

no more subject to government control or taxation than the latter. How serious an obstacle this argument opposes to efforts to secure for the general public a share of the benefits of monopoly is familiar to everyone who follows current discussions of the monopoly problem.

Monopoly is Not Necessarily Antagonistic to Public Interest

§ 116. There is a widespread impression in the United States that monopolies are always and unalterably opposed to the public interest. This is based partly on experience of the bad phases of monopoly and partly on the teachings of jurists and economists. American courts uniformly declare monopoly, except that created by the government itself in the exercise of its constitutional powers, illegal. Economists are equally prone to characterise monopoly as abnormal and to extol an industrial system of free, all-sided competition, as that best calculated to promote the general interest. There is, of course, good reason for this distrust of monopoly, but if the analysis we have given of the different kinds of monopolies and of the restraints under which they exercise their powers is accurate, it ought not to be extended to all without qualification. For some industries monopoly is not only as normal and inevitable as is competition for other industries, but it is the form of organisation that best serves the public interest. Natural monopolies of organisation, for example, are monopolies because as such they can produce more economically than could competing firms. For them the monopoly form of organisation is the desirable form, which should be encouraged rather than discouraged by those who have the public interest at heart.

Desirable Monopolies Should Be Regulated

It is not proposed in this chapter to discuss practical phases of the monopoly problem, but it may be remarked in passing that what the public interest requires is not so much the complete suppression of monopoly as the suppression of monopolies which are managed with sole reference to monopoly profits. Desirable monopolies should be fostered, but they need also often to be regulated if they are to render the largest social service of which they are capable.

Monopoly Profits Not Always Large

Another misapprehension that is current is that monopoly always means large monopoly profits. Perhaps the easiest way to dispel this illusion is to call attention to what would happen

if every line of business were to become a monopoly. In that case the combinations of entrepreneurs controlling different branches of production would be no better off, so far as profits are concerned, than they are now, when most lines of business are competitive. Their efforts to raise prices would be counterbalanced by similar efforts on the part of other entrepreneurs. This must be the case because exchange values are at bottom ratios, and efforts to enhance both terms of every exchange ratio must leave them very much as they were before. No more wealth would be produced and consequently there would be no more to distribute as profits or as any other share. The actual situation is, of course, very different from this assumed case, but the limitations on the powers of monopolists which it presents are also quite effective. The power consumers possess of substituting other goods for those monopolised, and the danger that competition will be excited, are ever-present forces that confine monopoly profits in most businesses within narrow limits.

The Influence of Monopoly Profits on the Other Shares in Distribution

§ 117. Monopoly was expressly excluded from what we have styled the state of normal equilibrium, not because it is considered abnormal or even unusual, but because it is easier to trace its influence when it is studied in isolation. In actual industrial society competitive and monopolistic enterprises are carried on side by side and act and react upon each other. The influence of monopoly should be briefly indicated before we turn to a discussion of the competitive shares of income—rent, wages, and interest—treated in the following chapters. To secure monopoly profits monopolists must fix the prices of their goods somewhat above their expenses of production. In the example given in an earlier section the largest monopoly profit was secured when the price of the patented soap was fixed at ten cents. The expenses of production for the 2,500,000 cakes that could be sold at that price averaged only five cents, so that the effect of the monopoly was to make the price double what it would have been had competition had free play. To maintain the price at ten cents the monopolist must of course limit production to the 2,500,000 cakes which the public will take at that figure. If competition forced him to lower the price to six cents he could produce and sell, according to the

conditions of the illustration, 6,000,000 cakes. At the price corresponding exactly to the expenses of production, five cents, he could sell a still larger product. The effect of monopoly is, accordingly, to reduce the amount of the monopolised good that is produced and sold below what it would be under conditions of free, all-sided competition. Only through such reduction or curtailment of the supply can the coveted monopoly profit be secured. But reducing the output of the monopolised good involves the employment by the monopolistic enterprise of less land, labour, and capital than would be needed in the same branch of production if competition had free play. The effect of monopoly is thus to increase the supplies of the factors of production which must find employment in competitive industries. What influence this mal-distribution of the factors of production is likely to have on the shares of income, rent, wages, and interest, can only be explained after we have considered how these shares are determined. Such influence is of course supplementary to the tax on all consumers who buy monopolised products, resulting from the enhancement of their prices.

Practical Phases of Monopoly Problem Treated in Later Chapters

The phases of the monopoly problem that have assumed greatest importance in the United States concern legal and natural monopolies, trusts, and labour monopolies, and these are treated at some length in later chapters (XXI., XXIII., XXIV., and XXV.). The reader will find in them many concrete details and illustrations which out of consideration for space have been omitted from the preceding sections.

REFERENCES FOR COLLATERAL READING

****Marshall*, Principles of Economics, Book V., Chap. XIII.; **Ely*, Monopolies and Trusts, Chaps. I.–IV.; **Bullock*, Introduction to the Study of Economics, Chap. XI.**

CHAPTER XII

DISTRIBUTION: RENT

Contrast between Profits and Other Shares in Distribution

§ 118. In the preceding chapters the more or less irregular and uncertain shares in distribution have been discussed. Competitive profits rise and fall and for entrepreneurs as a whole, except in periods of industrial expansion, are as likely to take the form of losses as of gains.* Monopoly profits are more stable and in the aggregate constitute an important part of the community's income, but the conditions upon which monopoly depends are subject to change; the tastes of consumers may be modified or substitute articles may be put upon the market; new methods of production may be devised which deprive the monopoly of its advantage, or the strong arm of the law may be interposed to divert monopoly profit to the public either by the forcible lowering of prices or through taxation. In these and other ways monopoly profits may be reduced or entirely cut off before they have been enjoyed for any long term of years. In contrast with profits, the elements entering into the normal expenses of production —rent, wages, and interest—are regular and persistent. Their payment is not due to the absence of competition, but is the direct consequence of the activity of competitive forces. The keener and more general competition is the more certain and definite these shares become. For this reason in explaining them it will be convenient to revert often to the relations that

*The German economist, von Thünen, advanced the theory that competive profits must in the long run be on the positive side, because entrepreneurs take great risks and must be compensated for so doing. This depends, obviously, upon whether taking risks in the industrial society under consideration is distasteful. In the United States there are so many people who really like to take risks that compensation for risk-taking is a negligible element in profits.

would prevail in an industrial society brought to the state of normal equilibrium. In such a society the relations which economic forces tend to establish in the actual industrial world are sharply defined and may be easily apprehended.

The Nature of Rent

§ 119. Rent is the term given in economics to the share of income that is assigned or paid to owners of land, sources of water power, and other gifts of nature which assist production, for the use of these factors. When the factor is used by the owner himself, rent is a part of the gross return that he realises from his year's business and is, economically, as distinct from his other income as it would have been had he leased the factor at a stipulated rental from some other owner.

Problems Connected with Rent

A complete study of rent involves two distinct lines of inquiry. First, it must be explained why rent is paid and what determines its amount. These are purely scientific questions. Secondly, it must be considered whether the present system of allowing the earnings of land and other gifts of nature to go to the individuals whom the law designates as their owners is socially defensible. This also is a scientific question, but its answer depends upon moral, political, and social considerations which are still matters of dispute even among the most intelligent and best-intentioned. In this chapter attention is confined to the *explanation* of rent.

The Source of Rent

§ 120. The source of rent has already been indicated in Chapter VI., Section 63. It was there shown that land and natural powers assist production unequally in different situations and that rent is what entrepreneurs pay for the use of superior land and sources of power to equalise conditions.

The Principal Grades of Land Distinguished

In a country like the United States land is divided up into hundreds of different grades to be applied to as many different productive uses. To simplify the explanation we will assume that these different uses of land may be included under five heads as follows: Grade A, Sites for City Stores; Grade B, Sites for City Residences; Grade C, Truck-farming Plots; Grade D, Wheat Land; Grade E, Grazing Land. The relation between these different grades of land may be represented without great inaccuracy as that between the areas enclosed between concentric circles, as in Figure 7.

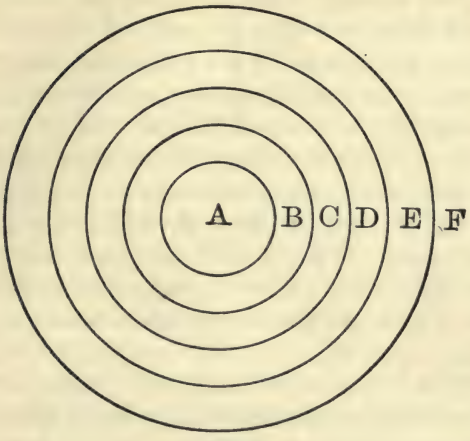


FIG. 7.

Store Sites

At the centre (A) is the land devoted to store sites, which is economically the most important use. For purposes of trade central situations must be selected. These are also desirable for residence purposes, but inasmuch as a residence site serves but one family, while a store site serves many families of customers, the store use triumphs.

Residence Sites

Next to the store sites in a city are residence sites (B), which, other things being equal, are desirable in proportion to their nearness to the business centres. Many lots are just on the borderland between these two uses. It is just worth while for storekeepers to pay a little higher rent for them than they command as residence sites, or not quite worth while.

Plots Devoted to Truck-farming

Beyond the residence sites are plots devoted to truck-farming (C). In every city the line is somewhat roughly drawn between these two grades, and some land is found in a transition stage which may be had for truck-farming at a very moderate rental on condition that the lease shall be terminable at the will of the owner. In spite of this complication it is not difficult to find city lots that have just been withdrawn from use for farming and truck farms that are coming to be so much in demand for residence purposes that the owners are seriously considering giving them up to real-estate operators. These are the borderlands between grades B and C.

Farm Land Proper

All land good enough and near enough to a market to be used for truck-farming might be used for the cultivation of some staple crop like wheat. That it is not is proof that truck-farming causes it to yield a higher rent than would wheat-farming. Trucking is economically a more important use, chiefly because green vegetables will not stand distant transportation as will wheat and other staples. On the outer circumference of the belt of land devoted to truck-farming will be found acres which it does not quite pay to use for this purpose and which are cultivated extensively for some staple crop. These are the borderlands between grades C and D.

Grazing Land

The transition from arable farming to grazing occurs similarly at the outer circumference of the lands devoted to the growing of wheat. Land too remote or too poor to be sowed with a wheat crop is yet well adapted to the grazing industry and may afford a moderate rental in comparison with the land still more remote and still poorer which it barely pays to devote even to this economically least important industry. Beyond this last land at the circumference of the grazing belt is still more land (F) that in the country's present stage of industrial development is economically useless and therefore valueless. Under the Homestead Acts lands of this grade may be had almost free of charge from the government. Practically speaking, it is no-rent land, and so long as any considerable amount of it remains open to settlers it furnishes a no-rent margin from which all rent is calculated in the manner described below.

Fertility as Important as Situation in Determining Rent

In this classification more attention has been given to situation than to fertility or other qualities as a guide to grading lands, because it is the phase of the subject most apt to be neglected. The reader scarcely needs to be reminded that the other qualities enumerated in Chapter VI. are quite as potent factors as situation in determining where a piece of land belongs in the economic scale. In the case of lands whose products are of high value in proportion to their bulk, situation counts for little in comparison with the richness of the source of supply. This is illustrated by the fact that the gold resources of the Klondike are being exploited nearly as rapidly,

in spite of the remoteness of the region, as those of Cripple Creek.

The Demand for Land of Different Grades

§ 121. To the successive grades of land that have just been described the reader must oppose in his imagination the market for the goods which land and the other factors of production unite to produce. First comes the demand for lots for business purposes. Entrepreneurs appreciate the importance of location as a condition to business success. The best sites are eagerly taken and, as the community grows, new lots are each year withdrawn from their old use as residence sites because business men are willing to pay a little more rent for them. Improvements on the land interfere somewhat with the free play of this tendency, but even the most substantial buildings decay in time and if a broad view be taken there will be found enough plots to pass each year from use as residence sites to use as store sites to maintain a practical equilibrium. Different kinds of businesses, railway transportation, wholesale and retail trade, banking, etc., require lots in different situations, and all such differences have their influence on rents. We shall not be far wrong, however, in assuming that business men require centrally located lots, the lots embraced in the inner circle, A, in the figure. In deciding what rent he can afford to pay for a given store site, the entrepreneur never thinks of comparing it with farming land on the outskirts of the city. He knows that unless he establishes himself within a limited area he might as well not go into business. To him marginal lots are not those on the outskirts of civilization which he could get for nothing, nor even those on the outskirts of the town whose rent is low, but the choice residence lots on the border between grades A and B, for which he must pay a high rent because of the demand for them for residences. To this marginal rent, which all entrepreneurs must pay for lots in A, is added a differential rent for the better lots corresponding to their superiority. The choicest lot of all yields the highest rent, and this is what it adds to the returns of a representative firm for a given outlay in wages and interest in that line of business which depends most on situation for its success, retail trade. The practical determination of this rent is a matter of considerable difficulty,

and it is doubtful if the exact competitive rent is ever paid for such a piece of land. Something approximating this amount is paid, however, or is charged to the account of rent by the entrepreneur who owns the site on which his business is located. From this maximum the rents of inferior lots decrease to the marginal rents which those on the border command. In each case rent figures as one of the expenses of production which the practical business man counts on recovering in the price.

Rent Includes Usually a Marginal as well as a Differential Element

The determination of rents of residence lots is effected in exactly the same way. From the highest rent of the best lot, which corresponds to the lowest rent for a lot of grade A land, to the highest rent truck-farmers are willing to pay for border lots between B and C, there is the same gradual descent, influenced in this case by calculations of utility rather than of business returns. To the extent that personal considerations weigh more in the choice of homes than in the choice of business locations, these calculations of utility are variable, but when we are considering the thousands of people of each social class that make up a city population these personal eccentricities neutralise each other and may be disregarded. For those who reside in cities as well as those who do business there the choice is not between rent and no-rent, but between high rent and marginal rent. Lots to be had for nothing are so far away from the places where city dwellers earn their livelihoods that they are worth to them considerably less than nothing.

The Calculation of Rent

The rent paid by the truck-farmer, or credited by him to his land of grade C, obeys the same principles that have been outlined. According to the situation, fertility, etc., of the land it pays a rent ranging between that which the best truck land affords, the marginal rent for grade B, and the rent which must be paid for the borderland between C and D to keep it from the wheat farmer, or more accurately which as wheat land it would afford. Similarly the wheat farmer pays a marginal rent to cover what the poorest wheat land would be worth for grazing purposes. The grazier himself is surrounded by land of a still lower grade, F, which is still in the category of free goods. This margin is accordingly a no-rent margin and the price of his product need under normal conditions merely cover

the expense for wages and interest on the poorest land on which cattle, sheep, and horses are raised.

Summary of Explanation of Rent

From this explanation it appears that the rent paid for any piece of land above that in the lowest grade includes a marginal and a differential element. It must be as high as the rent earned by the best land of the next lower grade or it would itself be transferred to that grade. It must also be higher than the rent paid for the poorest land in its own grade by an amount corresponding to its own superiority for the given purpose. Only grazing land, or land which is at the bottom of the economic scale, has its rent determined by comparing its properties with those of land which affords no rent at all. The marginal land for lands of higher grades is always a rent-paying land, and for the highest grades the amount of rent paid on the margin is very considerable.

Graphic Representation of the Theory of Rent

§ 122. The determination of rent on different grades of land may be represented graphically by the following figure:

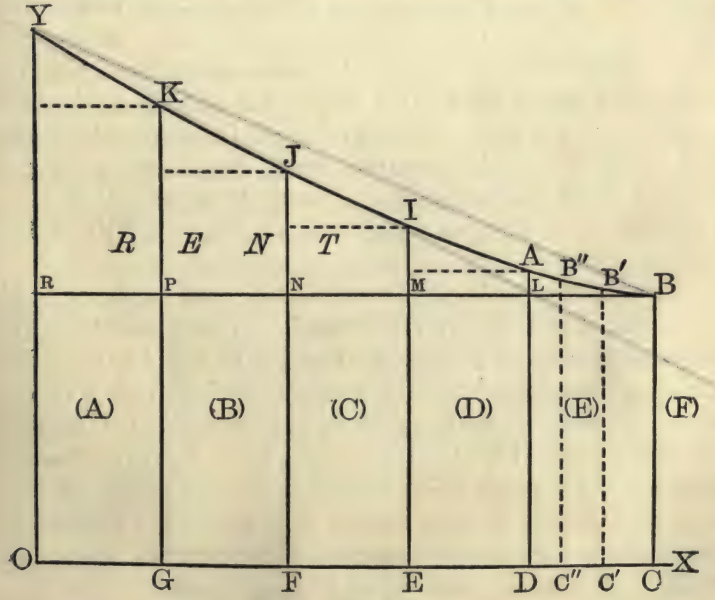


Fig. 8.

As in the previous section, it is assumed in the above figure that the land of the country is assigned to five different uses

ranging in importance from sites for business blocks to ranches for grazing purposes. At the margin for land of grade E the product, or the purchasing power represented by the product, will just cover the expenses of production in wages and interest—allowing, of course, for the replacement of capital goods—and will leave nothing over for rent, since it is no-rent land. Representing the return at this margin for each unit of labour and capital by the length of the line B C, the return for a like outlay on better grazing land should be represented by longer lines such as B′ C′ or B″ C″. If all land used for grazing is considered, the relation between the whole return and the portion assigned to rent will be represented in the area B C D A. C D will here measure the number of units of labour and capital applied to all land, and since the return to one unit on the margin is B C, and since competition will tend to make all accept the same remuneration, the parallelogram B C D L will represent the total assigned to wages and interest, and the triangle B L A the surplus product obtained on the better grazing land, or the rent.

The Rent of Land of Grade D

The marginal land of grade D yields a return to each unit of labour and capital equal to the length of the line D A, since it is superior grazing land. Of this return L D remunerates labour and capital and L A constitutes rent. Representing the produce of all of the land of grade D by the area A D E I, we have here L D E M as wages and interest and A L M I as rent.

The Total Rent

The division of the product obtained from lands of grade C, B, and A is similarly represented. In each case there is a considerable rent on the marginal land to be added to the differential rent resulting from the superiority of each piece of land above the margin for the particular use to which it is applied. The whole rent of land is represented in the figure by the area B R Y. As a whole it is a differential return measured from a no-rent margin to be contrasted with wages and interest determined, as is explained in the following chapters, by the productiveness of labour and capital at this margin.

Other Causes of Rent

§ 123. In the above explanation of rent attention has been confined almost exclusively to land in the narrow sense. The rent earned by sources of water power and by mines is deter-

mined in a similar way, but perhaps deserves separate consideration.

The Rent of Sources of Water Power

The utilisation of water power involves usually a considerable outlay of capital, and hence the marginal powers used must afford a large return for interest on the capital invested even though they yield no rent. In connection with the use of water power situation is also an important factor. It is profitable to use the power of Niagara because it is surrounded by a rich agricultural and manufacturing country. Much cheaper sources of power are not yet utilised west of the Mississippi because other conditions are not favourable to the development of industries to which the power might be applied. From the marginal source of power in use, which affords no rent, the rents of superior or more favourably located sources of power are calculated by the familiar comparative method. Ordinarily water power is utilised by the entrepreneur who owns it, and hence its rent appears only as an item in his private bookkeeping. Competing with water power are steam power, horse power, etc. The price at which any substitute power can be obtained for the performance of a given industrial task constitutes a maximum above which the rent of water power cannot for any length of time be maintained.

The Rent of Mines

The rent of mines is determined in the same way as the rent of land, except that the marginal mine is not necessarily one which affords no rent. Since a mine will not renew itself, but by each year's operations is depleted of so much of its ore, the rational owner hesitates to work his mine when it barely pays expenses. The ore is a valuable asset, and the owner is short-sighted who takes it out to sell at cost. In practice this consideration is not very important. Mining is so uncertain that in nearly every branch of the industry mines are operated at cost or even at a loss by men who hope that the ore will get richer with depth or that the price of the mineral will advance. As a matter of fact, therefore, it is usually possible to find no-rent mines producing each variety of mineral that comes out of the earth. The rent of better mines is measured up from them as a no-rent margin. When mines are operated under lease the rent is usually calculated as a royalty proportioned to the amount of ore actually removed

from the ground. Under this system when mines are operated literally at cost in wages and interest, the royalty represents an actual loss to the operator. This is usually an effectual bar to the operation of no-rent mines by other entrepreneurs than those who own them, but since the lease system is exceptional rather than the rule, this does not prevent the presence of no-rent mines in nearly every branch of the mining industry.

Apparent Exceptions to the Law of Rent

§ 124. In the graphic illustration just given, land is represented as though it were perfectly graded from best to poorest, and it is implied that the location of a given piece of land in the particular grade to which it belongs is a simple matter. There are several well-known facts in regard to land, sources of water power, and mines which are inconsistent with these assumptions, and we should now inquire whether these facts invalidate the explanation of rent which has been given:

The No-rent Margin Found in Connection with Various Uses of Land

I. There is not merely one use to which land is applied down to a no-rent margin, but several uses. In the United States some wheat is probably raised regularly on no-rent land and a good deal of corn is so produced. In these cases the rents of better wheat and corn lands are measured from the no-rent margin just as are those of the better grazing lands. Instead of having one no-rent margin we have several, but their collective influence on rent is no different from that traced to a single one.

The Rotation of Crops Complicates but Does Not Contradict the Law of Rent

II. In farming in the United States the tendency is more and more towards the diversification of crops. No one crop is raised continuously, but different crops are raised in rotation, and the productiveness of the land depends not upon its yield of wheat or corn or cotton alone, but upon its yield of all of the different crops grown over a series of years. Although this greatly complicates the rent problem it does not change the principles upon which rent depends. The tendency is still to devote each piece of land to the use for which it is economically best adapted. If this is diversified farming, then the average return in the different crops in the rotation for a series of years must be calculated and made the basis for comparing it with other pieces of land. Through the indirect process described it will be compared finally with no-rent land on the

margin, and the surplus return it affords in comparison with no-rent land will be its rent.

The Average Return the Basis for Calculating Rent

III. No piece of land yields exactly the same return, even though cultivated in just the same way, two years together. The weather is a capricious partner upon which every farmer depends, and as a result of weather changes large crops are sometimes followed by small crops in spite of everything the farmer can do. These variations affect rent only by making it less a matter of mathematical calculation and more a matter of approximate estimate. Uncertain as is the outcome of each year's farming, the average return for a series of years may be foretold with a good deal of accuracy. It is these averages that should be and are considered in calculating the rent properly ascribable to a piece of land.

Land Fit only for One Use May Command High Rent

IV. Some pieces of land, such as the barren rock of particular lots in New York City, are well adapted to one purpose, but unsuited to any other. Yet the absence of possible substitute uses does not prevent such pieces from commanding often very high rents. This is no real exception to the theory as explained. The primary cause of rent is the demand for land for industrial uses. If the possible uses are arranged in a scale in the order of their importance, then the best land for the purpose will be assigned to use A down to the point where a given piece is even better adapted economically—will yield a larger return—in use B. That some pieces admirably suited for use A would not serve use B or any other use at all simply lessens the requirements for land for use A that will serve use B. The result is a somewhat lower rent margin between A and B which communicates itself all along the line. Land adapted for one purpose only, if used at all, is of necessity devoted to that purpose and affords a rent depending upon the way in which it compares with marginal land used for the same purpose. If it is the only land for the purpose, as a single rock projecting out of the sea is sometimes the only available site for a lighthouse, it may command a monopoly rent corresponding to the intensity of the want it satisfies. Unique situations of this sort usually belong to the government and therefore the calculation of their rent is of little practical interest.

There are other apparent exceptions to the theory, but the

Other Exceptions

reader's own ingenuity will determine whether and to what extent they modify it in operation.

Obstacles to the Exact Calculation of Rent

In an industrial society approaching the state of normal equilibrium competition would assign each piece of land to that particular use for which it was best adapted, and once assigned each piece would continue to be used for the same purpose as long as the state of equilibrium was maintained. In such a situation rent would be so constant that its calculation would be a very simple matter. The rent problem is complex in actual industrial society because pieces of land are constantly being assigned to new uses. New pieces of land are being brought under cultivation or are being improved with buildings, while old pieces of land are being abandoned or the buildings on them are being destroyed. Under these circumstances the calculation of rent can be at best but an approximation, and there is latitude for no little disagreement as to what should be paid for or credited to each piece of land that aids in production. In comparison with the gross amount of rent, however, the sums involved in these possible variations are small and may without serious error be disregarded when the broader problems of economics are under consideration.

Investments of Capital in Land and Rent

§ 125. The difficulty of distinguishing between land and capital in the form of permanent improvements has already been alluded to. Once made, investments of capital in permanent improvements are merged in the land, and the incomes they afford obey the principles just laid down in reference to rent rather than those about to be explained as applying to interest. For example, consider the return on the investment of capital necessary to clear land and prepare it for the first time for cultivation. Unless the return promises to be large enough to pay the current rate of interest on the investment it will not ordinarily be made, but after it has been made the cleared land affords an income in no wise controlled by the amount of the investment. All the labour of New England farmers during the seventeenth and eighteenth centuries in clearing their farms of stones and improving them in other ways did not avail to check a rapid fall in the incomes they afforded to their descendants so soon as they came into competition with the better lands of the Miss-

issippi Valley. The abandoned farms of the former section bear eloquent testimony to the fact that interest can be continuously secured only for capital that may be withdrawn and reinvested as often as changes in industrial conditions make this desirable. As soon as capital becomes embodied in fixed and unalterable capital goods, the income it affords ceases to obey the principles determining interest and becomes subject to the law of rent. Most improvements, however, are not fixed and unalterable, but wear out and have to be renewed. They require, therefore, a continuous reinvestment of capital, which will only be made on condition the income secured corresponds with the rate of interest to be obtained in other lines of investment. In this indirect way the return on perishable improvements is adjusted to the current rate of interest.

The Capitalisation of Rent

§ 126. In Section 115, Chapter XI., attention was called to the business man's method of putting a price upon a monopoly or any other fairly permanent source of income. It was there shown that the annual return from the monopoly was capitalised at the current rate of interest and that the result, with ample allowance for risk, etc., was the amount at which the monopoly would be valued. Exactly the same method is applied in the valuation of land. The rent, less deductions for taxes and other necessary expenses, is capitalised at the current rate of interest, and the result is the normal price of the land, about which its market price fluctuates. For example, if a given piece of land is found by experience to bring in on an average a net rent of $1200, and the current rate of interest is 6 per cent., its price should be $20,000, or the sum which invested at 6 per cent. would yield the same return. If the rent is only $600 the price will be only $10,000. On the other hand, if in the first case the rate of interest should be 4 instead of 6 per cent. the price of the land would be $30,000. The price of land thus varies directly with the amount of its rent and inversely with the rate of interest. In a developing country like the United States the probability is so strongly in favour of an increase in rents, especially in the case of city lots, that shrewd investors are willing to accept even less than the current rate of interest from their investments in land. In such cases the present value of a lot may be the capitalised value, not

of its present, but of its prospective rent. Land has been on the whole an excellent investment in the United States during the last thirty years, in part because the rent it affords has so generally risen, but quite as much because the rate of interest has fallen and the prices of pieces of land have risen even more than the rents. The latter point must be remembered in connection with the interpretation of statistics showing the growth of wealth. In countries experiencing a declining rate of interest there is an appreciation of land and other permanent sources of income without any corresponding change in the ability of these factors to contribute to general well-being.

Rent a Funded Income

In the same way that the designation "funded income" was applied to monopoly profits it may be appropriately applied to rent. Funded income differs from interest in that the latter is in proportion to the amount of capital actually invested in an enterprise, while the former is itself the basis by which the capitalised value of the source from which it is derived is determined.

Summary of the Theory of Rent: Its Cause

§ 127. The explanation of rent that is given in this chapter and Chapter VI. may be summarised as follows:

1. Rent is an income which arises from the superior productivity of land above the margin in comparison with that at the margin.

Includes Usually a Marginal as well as a Differential Element

2. Marginal land for some of the uses to which land is put is actually no-rent land. More commonly the marginal land for any particular use itself affords a rent because, though marginal for the given use, it is above the margin for some other use to which it might be applied. Rent is thus composed usually of a differential and of a marginal element. The former is an expense of production only to entrepreneurs using superior land for the given purpose, but the latter must be paid by all entrepreneurs engaged in the given branch of production and hence figures as an element in the normal expense of production.

But May Be Calculated from the Intensive, No-rent Margin

3. In addition to the extensive margin there may be, and usually is, an intensive margin, that is, a use of land resulting from an additional investment of labour and capital on it which affords no rent. The intensive margin of cultivation is always a no-rent margin.

4. Rent is measured by the method of differences starting from the no-rent land margin and proceeding from grade to grade until the best and most favourably situated lot for the purpose that is economically most important is reached. In the aggregate it is the surplus product due to the superiority of the land to which it is credited over the poorest land turned to industrial account at the no-rent margin. A Surplus Income

5. When best land is superabundant, as is the case in some newly discovered and sparsely settled regions, rent does not arise. Where Best Land is Superabundant

6. If the law of diminishing returns did not apply to land, it would not arise, as then one piece of land would serve all purposes for an indefinitely large population. Law of Diminishing Returns

7. The income yielded by permanent improvements on land obeys the same law as income ascribable to the land itself. Permanent Improvements

8. The price of a piece of land, together with permanent improvements embodied in it, is calculated by capitalising its net money rent at the current rate of interest. A falling rate of interest tends, therefore, to enhance the land item in the inventory of a community's wealth. Price of Land Rent Capitalised at Current Rate of Interest

§ 128. In the foregoing explanation of rent the share of the return that is economically ascribable to land has been referred to, rather than the commercial rent that is in practice paid to landlords. The latter is determined to some extent by custom and personal considerations between landlord and tenant and rarely corresponds exactly with the economic rent. In case the commercial rent is less than the economic rent a part of the return is retained by the tenant as a gratuitous addition to his income from the labour and capital he may have invested in his business. On the other hand, if the commercial rent is too high the land owner gets not only what the land is entitled to, but also a part of the return which should go to the land cultivator. In either event the full economic rent is present as a part of the income shared between those who have an interest in the land either as owner or as user. Actual Rent Differs from Economic Rent

The most familiar mode of determining commercial rent without much regard to economic principles is the so-called *métayer* system. This is the plan by which the cultivator pays half the produce of the year's husbandry to the land owner, The *Métayer* System

who furnishes sometimes also seeds and tools, and retains only the other half for himself. Cultivating land "on shares" after this fashion has long been the custom in European countries and is common in the Southern States of the United States. It has the disadvantage of not adapting itself readily to changing conditions which involve changes in economic rent, and has therefore been superseded in the more highly developed sections of the country by the system of money rents.

The Rent of Buildings Distinct from Ground Rent

In connection with the rent of land improved by the erection of buildings upon it business men are in the habit of lumping together into one sum the rent of the land and the interest on the capital invested in the buildings and calling this "rent." When a distinction is made between the two, the first, or rent proper, is called the ground rent, and the second is called the rent of the building. It would be an aid to clearness if this mode of division were to become universal, but even in its absence an expert appraiser can usually say with a good deal of accuracy how much of the gross rent for a built-over lot is due to the building and how much to the lot itself. Economically the two returns are quite distinct.

Importance of Rent in the United States

§ 129. It would be interesting to know just what part of the income enjoyed by the inhabitants of a country like the United States is properly classified as economic rent, but unfortunately no reliable information on the point is available. Most of the land of the country, most of its sources of water power, and most of its mines are operated by owners rather than by lessees. In consequence, calculations in regard to rent are largely matters of private bookkeeping, and are made with the carelessness which business men permit themselves when they come to divide their gross profits into the various items which economic analysis distinguishes. Any statement in regard to rents as a whole must, in the nature of the case, be but a rough guess, except for countries like Great Britain, where lands, mines, etc., are commonly operated under lease and the determination of rents is a matter in which two parties are interested.

According to the British income tax returns, the total income

Rent as a Source of Income in Great Britain

from lands in the United Kingdom in 1897 was some $275,000,000. This did not include the income from mines, quarries, etc., nor ground rents. The addition of these items would increase the total to about $750,000,000, which was about one-tenth of the total income of the country. The total income ascribable to rent in the United States is probably less in proportion than the total for Great Britain. The country is newer and its lowest margin of cultivation is higher than the lowest margin for the much more densely populated mother country. It will perhaps be not far from the truth to estimate the rent income of the inhabitants of the United States at from one-fifteenth to one-twelfth the total income which they enjoy. The payment each year to private property owners of this large share of the country's income for services rendered not by themselves, but by their property, is a practice vigorously condemned by many intelligent students of economics. The most radical modification in the present system that has been proposed is that advocated by Henry George and his followers under the phrase "the Single Tax." The arguments for and against this proposal, and other plans for solving the land problem, are considered in the chapter on Plans of Economic Reform.

REFERENCES FOR COLLATERAL READING

**Marshall*, Book VI., Chaps. IX. and X.; **Walker*, Land and Its Rent; **Pierson*, Principles of Economics, Part I., Chaps. II. and III.; *Nicholson*, Principles of Political Economy, Book II., Chaps. VIII. and IX.; *J. S. Mill*, Principles of Political Economy, Book II., Chaps. VI.–IX., and XVI.; **Johnson*, Rent in Modern Economic Theory, an Essay in Distribution.

CHAPTER XIII

DISTRIBUTION: WAGES

Wages Defined

§ 130. Wages, as the term is used in economics, include all earnings assigned to men for their work, from lowest piece wages to highest annual salaries and "wages of management." From the point of view of production wages are items in the normal expense involved in putting goods on the market. From that of distribution they constitute one of the great shares into which a community's income of goods is divided.

The Wages Question

The problem of explaining wages is more complex than that of explaining rent because it has to do more directly with living men and women. Like the latter it involves an explanation of differences in earning power between different factors in production. In the United States some workers receive as compensation for their work not more than forty cents a day, while others are paid salaries of $100,000 a year and upwards. Such differences must be accounted for in a theory of wages. In the case of rent an explanation of differences in the shares assigned to different pieces of land is a sufficient explanation of the phenomenon because these differences are measured from marginal land, which affords no rent.* The same is not true in the case of wages. Marginal workmen earn something, and after all differences in earnings have been explained it still remains to account for marginal or least earnings. Another cause of difference between the two problems is that while the land supply of a country is relatively fixed and unalterable, its labour supply or its working population is constantly changing. The continuance year after year of high rents for certain pieces of land and of low rents for others, excites no surprise, but the continuance of differences in wages seems to need special ex-

*The circumstances which determine the location of the margin of cultivation must also be explained, of course. *Cf.* Chapter XV.

planation. Why, as generation follows generation, are not all men moulded through an evolutionary process to one common type, so that differences in earning power are eliminated? This is a third distinct question presented by the wages problem. In the following pages an explanation of the causes of differences in wages leads up to a discussion of the reasons for the perpetuation of such differences. The explanation of the rate of pay that goes to marginal workmen is deferred to the next chapter.

Differences in Rates of Wages Due to Unequal Capacities of Workmen

§ 131. Most differences in rates of wages may be explained superficially in the same way that differences in rent were explained. The demand of consumers calls for the production of certain goods. Entrepreneurs, taught by the industrial experience of the past, determine how the available productive factors shall be correlated for the purpose of satisfying as far as possible this demand. The organisation of industry which results calls for workers of different capacities for different tasks, just as it calls for different grades of land. These capacities are graded according to their economic importance, which depends, on the one hand, upon the field there is for their exercise and, on the other, upon the number of men possessing them that are available. Having in mind present methods of production and the present working population of the United States, we may distinguish the following five grades of workers: (1) men having superior capacity for planning and carrying out large industrial undertakings, good administrators, and talented artists and professional men; (2) men competent to succeed in smaller undertakings or to administer large affairs as subordinates, artists and professional men of average ability, and highly skilled mechanics; (3) men trained for ordinary clerical or mechanical labour; (4) men without special training, but having the requisite strength and endurance for manual labour; (5) men lacking some of the mental or physical qualities essential to continuous labour of any kind. This classification is illustrative rather than exhaustive. To be complete it would have to recognise hundreds of different grades of productive capacity instead of five, and to be repeated for each territorial division of the country. It is intended to include only economic men and women, and not the unfortu-

nate dependents who are incapable even of the humblest self-support.

Differences Determined in Same Way as Rents

Just as in the land scale the area adapted by situation and other qualities for the most important industrial uses is exceedingly limited, so in the scale of workers the number of men fitted for the highest grades of labour is very small. In each branch of production and in each profession in every community some one man is found at the top. Unique capacity may not be the only cause of the ascendency of such men, but unless it is present they will not be able for any length of time to hold their positions. Below the men of highest capacity for their chosen work are others of inferior ability, down to the marginal men in the group who find it just worth their while to continue to serve in their particular positions rather than to take up alternative employments of what we have called grade 2. The earnings of the abler men in the group are determined by the comparisons that are constantly being made between their efficiency and that of the marginal men, who are just induced by their pay to stay where they are and not to turn to other occupations. Superior men receive the pay of the marginal men and in addition a differential corresponding to their superior efficiency.

The Relation between Members of Different Groups

The earnings of workers in the lower grades are determined in the same way as those of men in grade 1. Competition acting through, and also upon, entrepreneurs, tends to assign to each worker above the margin in grade 5, wages made up of both a marginal and a differential element. The marginal element is what the poorest worker in the group could earn in the best-paid alternative employment open to him. Unless this at least is paid, the alternative occupation will be preferred and the scale will have to be readjusted. Here, as in the case of pieces of land, individuals without any power of substitution, but who are proficient in their special tasks in comparison with others doing the same tasks and having such a power, are as well off as though they had it themselves. For example, if of a number of college professors receiving salaries of $4000 a year each, some could earn as much or more in business positions and were hesitating whether to make the change, their power of substitution would serve to oppose effectually any

effort to reduce professors' salaries even though the others were quite unfit for any other kind of high-grade work than that they were doing.

Tendency towards Uniformity of Wages in Each Grade

In addition to this marginal element there is a differential element corresponding to the superiority of each worker in his grade. In practice the determination of this differential element in wages is a complex process except where piece-wages are paid, when it adjusts itself automatically. There is a tendency for whole groups of workmen, especially those organised in trade unions, to demand uniform wages. This policy prevents employers from hiring workers who do not come up to a certain standard of efficiency, but it also prevents superior workmen from receiving the differential wages to which they are economically entitled. In the occupations in which uniform wages for all workmen of each grade prevail, however, the work is usually so simple that individual differences count for relatively little and the differential wages which would result if competition were entirely free are a negligible element.

The Different Grades into which Workmen are Divided Overlap

§ 132. The above analysis implies that the world's workers may be arranged in a gradually descending scale and that there are no breaks separating adjacent individuals and classes. It is assumed that men doing the same kinds of work may be compared readily, so that the differential wages to which they are entitled may be determined; also that the marginal men in each employment are just held where they are by the payment of as high or slightly higher wages than they could earn in alternative employments. While this is true as a general picture, it must be admitted that the step from one employment to that next higher in the scale is often a long one. This is particularly the case with the step from the tasks of unskilled to those of skilled workers and with that from skilled manual workers to brain workers. Instead of saying that there is one scale of workers, it would be more accurate to say that there are three different scales. The scale for brain workers begins at the highest point and breaks off not just where the scale for skilled manual workers begins, but somewhat lower. That is to say, the compensation of brain workers of the lower grades is no greater than that of manual workers of the higher grades. In the same way the scale for unskilled workmen,

which begins low down, runs parallel to the scale for skilled workmen of the lower grades for a time and then continues to the lowest margin. Unskilled workmen of the higher grades earn as high wages as skilled workmen of the lower grades. It follows that the alternatives open to brain workers towards the lower end of the scale are a lower grade of brain work or a comparatively high grade of skilled labour, and those open to skilled workmen of low grade are still inferior skilled or comparatively high-grade unskilled labour.

Workmen below the Margin of Their Group

Another qualification that should be added to the analysis of the preceding section refers to the assumption that the least efficient or marginal workers in each group have alternative occupations which maintain the level of their earnings. This is usually but not always true. Just as it frequently happens that men who are superior in their given branch are competent to do nothing else, so it sometimes happens that men competent to do nothing else are at the very margin of efficiency for the work they perform. The earnings of such marginal men are fixed by a comparison of their work with that of abler men in the same branch of production to whom alternative branches are open. The options of the latter fix the return for that class of services to all the workers in their group. In extreme cases, as, for example, in the sweating industries, it sometimes happens that a group of workers competent to do all of the work of a given sort for which there is a demand are competent to do only that kind of work. Under such circumstances competition within the group may reduce wages to a starvation level and keep them there until the demand for the product increases, the number in the group is reduced, or alternative occupations are opened to some or all of the individuals affected.

In Practice the Number of Grades of Workmen is Very Large

§ 133. The assumption that the working population of a country like the United States is divided up into a few groups is helpful, but as already intimated the actual number of groups is legion. In recapitulating the explanation of differences in wages it will be well to think of the labour market with all of its complexities. On one side, then, is the scale of tasks to be performed, determined in part by the demand of consumers for goods and in part by the organisation of the productive factors adopted after generations of industrial experiment. On the

other is the working population divided up into hundreds of different groups corresponding to the diverse tasks to be performed. The wages paid to those performing the tasks highest in the economic scale are high. They must be so to keep such men from other tasks they might undertake and also to induce them to serve one employer rather than another in their particular tasks. The former possibility fixes a marginal wage which all men performing the given sort of work must receive. Competition among employers adds to this marginal wage a differential element measuring roughly the superiority of the better men over those who are just good enough to be retained in their positions. As the scale descends from group to group similar relations are found to prevail at every point. Each man's wages contain a marginal element determined by his own power of substitution or by that of some other worker in the same group. If he is superior to the marginal men of his group his wages will be higher by a differential element roughly gauging his superiority. If inferior, as sometimes happens, his differential will be in the form of a deduction from the wages which more capable men doing the same sort of work and with the power of substitution receive.

The Causal Relation between Marginal and Higher Wages

At the lower end of the scale marginal wages will be received which are not determined by what is paid in alternative employments because there are none, or at least none in which workers are actually employed. From these lowest wages, which are still to be accounted for, all higher wages are at last analysis measured. They are a minimum to which the differential in the lowest group is added to determine the marginal earnings enjoyed in the next higher group. To this another differential is added in the next higher group to determine the next higher margin, which figures in turn with another differential in determining a third margin. Thus by successive steps, like a flight of stairs broken by frequent landings, the highest earnings of all are finally attained. Although *measured* from the lowest margin, the wages paid at the top of the scale cannot be said to be *determined* by those paid at the bottom. In a progressive community it would be more accurate to say that the wages paid at the bottom are determined by what is paid at

the top. The tendency is upward rather than downward. Men are being drawn up from group to group and the lowest margin is itself rising. The important point at this stage of the explanation of wages, however, is to perceive clearly the connection between the rates paid for different kinds of work rather than to understand their ultimate causes.

The Rate of Wages Depends on Demand and Supply for Workmen of Each Given Grade

In conclusion it should be emphasised that the earning power of each worker depends on two circumstances neither one of which should be lost sight of in a discussion of wages. These are the appreciation in which the goods he helps to produce are held by consumers and the number of workers competent to engage in such production as his competitors. Rare combinations of industrial qualities command high wages if the goods that may be produced through them are in demand, but otherwise not. Even rather common combinations of qualities may command high wages if the field for their exercise is large. The highest earnings go to those who have unusual qualities for which there is great demand. On the other hand, the lowest go to men who have only ordinary abilities of a sort for which the demand is limited. Great administrators, like railroad presidents, get high salaries because there are many positions to be filled and few men competent to fill them. Sewing women, on the other hand, earn very little because there is little work for them to do in comparison with the number ready to do it. In neither case is the difficulty or ease of the work to be done the chief influence determining the pay which it commands. A multiplication of the men competent to be good railroad presidents would serve to reduce the salaries attached to such positions, even though there was not the least change in the nature of the work required. In the same way, a reduction in the number of sewing women would serve to increase the earnings of those who remained, although they worked no longer or better than formerly.

Differences in Wages Perpetuated by the Immobility of Labour

§ 134. Competition tends to bring the wages of workers having the same industrial qualities to a level within each labour market, just as it serves to cause identical goods within a goods market to sell for the same prices. A labour market is, however, more restricted than a goods market. As Adam Smith long ago remarked, "a man is of all sorts of luggage the most

difficult to be transported." The free movement of workers from positions where they are ill paid to positions where they are better paid, which is essential to free competition, is confined within narrow territorial limits. Ties of love, family associations, habit, or sheer inertia hold most men to the localities in which they were born despite the allurements of higher earnings in other places. There is, to be sure, a type of man to whom the attractiveness of new experiences in new surroundings is even greater than that of home, and in countries in which this type is common competition between workers is active over a wide area, with less wide differences in the rates of wages paid to workers of the same efficiency in different regions as its result. But even in the United States, where, according to the census returns, some twenty-five per cent. of the people live in other States than those in which they were born, this type is rare, especially among workmen of the lower grades, and differences in wages between different sections persist for many years. These differences would doubtless disappear in a few generations if new regions were not constantly being opened up and if new methods of production calling for a different distribution of the working population were not constantly being introduced. But so long as these changes occur on any considerable scale differences in wages may be expected to continue. Improvements in means of transporting workers and their belongings and of transmitting intelligence tend to widen the labour market and may in time make it as wide as the whole country. There seems little likelihood, however, that the barriers that now oppose the free movement of population between different countries, and by so doing perpetuate differences in rates of wages between nations, will be overcome for many centuries. Economists describe the unwillingness of workmen to seek the market which promises the highest wages as the *immobility of labour*. This immobility must always be kept in mind as a chief circumstance preventing that distribution of the labour force of each country, and even more of the whole world, which would yield the largest productive results. From the point of view of distribution it causes some labour markets to be oversupplied relatively with the different grades of workers for

which there is a demand and forces such workers to content themselves with proportionately lower wages.

Efficiency and Time Wages Contrasted

§ 135. In judging of the extent of differences in the rates of wages paid in different localities care must be taken to compare workers of equal degrees of efficiency. From the point of view of the entrepreneur it is not the time or effort of the worker for which wages are paid, but the work done. He is interested not in the wages per hour, or per day, or per week of his employees, but in the cost per unit of what they accomplish. If of two workmen labouring side by side one accomplishes in a given time twice as much as the other, his wages should be twice as high to make the cost of his labour to his employer the same as the cost to him of the labour of the other workmen. Free competition in the labour market tends to equalise the cost of labour or *efficiency-wages,* but not *time-wages,* except for workmen who are equally efficient. The industrial world presents many examples of differences in wages paid for the same kind of work due to differences in the efficiency of the workmen. Thus farmhands in the Northern States receive two or three times as high wages as farmhands in the cotton fields of the South, partly because they work harder and get more done in the same period of time. In the same way, the differences between the wages paid to American mechanics and those paid to similar mechanics on the continent of Europe is due in part to the greater efficiency of American workmen. In comparing Western countries with Eastern countries the importance of efficiency in determining wages must not be lost sight of. The very low earnings of the Indian coolie are due in part to a very low standard of efficiency in comparison with that of the workers of the white race. Even if the congestion of population in India could be relieved the low industrial efficiency of the people would remain a cause of relatively low wages.

Other Causes of Differences in Wages

§ 136. The statement that competition tends to make the earnings of workers of equal efficiency the same in any one labour market is only roughly accurate. Men do not consider the money return which an occupation promises merely, but all of the advantages and disadvantages connected with it. The principal other considerations which offset and consequently

help to perpetuate differences in money wages are the following:

Differences in the Cost of Living

(1) It is not money wages, but real wages, that are compared, and the latter vary with the expensiveness of living in different localities. In country districts the goods which wage-earners of the lower grades consume are cheaper than they are in cities. Rents are lower, food costs less, and clothing though dearer really costs less because less is required. Hence low money wages in the country may stand for the same real wages as high money wages in the city. An equally favourable comparison may be made between the cost of living in a warm and in a cold climate. In the former houses need less to be heated, fewer clothes and less food suffice, and the number of free goods is larger. These are other circumstances tending to keep money wages lower throughout the Southern States in the United States than they are in the North.

Differences in Cost of Mastering Different Trades

(2) Some occupations require longer apprenticeship and more expensive training than others. In comparing different occupations men normally take account of the time and capital that must be invested in preparatory training, and unless the earnings in the industry requiring special preparation promise to be large enough to repay them for the investment, they will not make it. In practice capital invested in training affords a very high return because so many of those who might benefit most from training are too poor to obtain it.

Differences in Agreeableness of Different Occupations

(3) Occupations differ in the ease or difficulty of the work required. The harder and more disagreeable the work the higher must the wages be to attract men from easier tasks. This does not mean that those who do the most disagreeable work are always the ones who are most highly paid. It often happens that men who do such work have not the option of doing something easier, and when this is the case their earnings may be very low. Whenever they have such an option, however, the wages paid for the most arduous toil must fully make up for the difference or it will fail to attract its quota of workers.

Allowance for Dangers Incurred

(4) Some positions are more dangerous than others and must offer a premium to cover life and accident insurance, in addition to mere wages, to attract workmen from safer trades.

Allowance for Chances of Success

(5) The chance of success and the rewards of success are different in different occupations. In the professions, especially, "nothing succeeds like success." The more clients or patients a man has the more eagerly he is sought by additional clients and patients. It results from this that successful professional men are as a rule successful even beyond their deserts. The hope of similarly large incomes attract into professional callings more men than the businesses require. This reduces the average earnings in these occupations. In the United States professional men undoubtedly receive smaller average incomes than do men of equal ability and training engaged in commercial enterprises, and partly for the reason just given.

Social Esteem a Factor

(6) Some positions are held in high esteem and offer social advantages to compensate for lower earnings. This is true usually of professional work and serves, like the previous influence, to depress the money earnings of professional men.

Also Regularity of Employment

(7) The regularity of employment must always be considered. Trades like those connected with building, which give employment only part of the year, must, to equalise advantages, offer higher day wages than those which occupy men continuously.

Finally Chances of Promotion Considered

(8) The chance of advancement and promotion must also be taken into account. Employments which lead to nothing should afford better pay than those having educational value and serving as steps in a gradual ascent to higher positions.

Competition Would Make Advantages of Different Employments Equal if Men were Exactly Alike, but They are Not

These and other similar considerations will readily be accepted as reasons for differences in wages that are independent of differences in men. Taken together they come so near to explaining all differences in wages that some writers have assumed that but for them competition would in time bring the money wages of all grades of workmen to one uniform rate. This would certainly be true if competition were perfectly free and equal, that is, if all men were sufficiently alike to turn readily to the occupations that offered the largest returns. Under such circumstances the working population would move away from industries which paid low wages and towards industries which paid high wages, until the increased labour supply in the former reduced earnings and the diminished supply in the latter advanced them to the uniform rate.

But, as we have seen, men are not alike in their industrial qualities. We must now inquire why the progress of evolution does not make them alike by gradually eliminating all but those of the highest industrial type.

The Influence of Heredity Indeterminate

§ 137. The qualities that fit men for the performance of different industrial tasks are partly inherited and partly acquired by education. In regard to the laws of heredity we still know very little. Although children generally display some of the characteristics of their parents or grandparents, they do so in such an irregular and seemingly haphazard way that it is always doubtful what traits any particular child is going to develop. Remarkable men and women have frequently, if not usually, rather commonplace children, while it is often impossible to say from which parents they themselves received their remarkable qualities. Until the laws of heredity are more perfectly understood it must remain doubtful whether hereditary differences tend to disappear. Extreme eccentricities which prevent the individuals displaying them from maintaining themselves and rearing families of average size are of course eliminated by the process of evolution; but within the limits permitted by the necessity of survival differences in capacity seem to be transmitted generation after generation without appreciable check.

The Influence of Habit, Custom, and Education

If heredity were the only factor in determining character and capacity the adjustment of the supply of workers of different grades to the demand for them would be largely outside of society's control. But most students agree that education, which includes all of the formative influences acting upon human beings from without as they pass through life, is an equally important force. Adam Smith went so far as to say that "the difference between the most dissimilar characters, between a philosopher and a common street-porter, for example, seems to arise not so much from nature as from habit, custom, and education." A similar view was expressed recently by a Chicago judge who had had much experience in dealing with youthful criminals. When asked if he thought that his own children would have been criminals if they had been brought up in criminal surroundings he replied: "I don't think so, I know it." Except as regards abnormalities both in the direction of

genius and imbecility the view that "habit, custom, and education" have at least as much to do with differences in men as "nature" seems to be justified by observation. In any case it is chiefly through education that men act in their efforts to fit their children for industrial life.

Differences in Standards of Living Perpetuate Differences in Wages

§ 138. Education being such an important influence in moulding industrial capacity, a partial explanation of differences in capacity must be sought in differences in the educational opportunities that are offered to the children of different families. Notwithstanding the self-sacrificing devotion of nearly all parents to the interests of their children, and notwithstanding improvements in free public educational institutions, such differences are still great, even in the United States. Their perpetuation is due in large measure to the different *standards of living* which control the conduct of different industrial classes. By the standard of living is meant the mode of activity and scale of comfort which a person has come to regard as indispensable to his happiness and to secure and retain which he is willing to make any reasonable sacrifice, such as working longer, or postponing marriage. It is evident that different individuals and different classes have very different standards of living and also that the self-restraint that the standard imposes upon some is greater than that it imposes upon others. Standards of living are nearly if not quite as numerous in a country like the United States as degrees of industrial capacity. To simplify the discussion we may divide the working population of the United States into the same five grades distinguished in a previous section and consider how the different standards of living of these different grades of workers affect the educational opportunities which children born into them enjoy.

Educational Opportunities Enjoyed by Children in First Grade

To the first economic class belong people with incomes from property or from professional or business activity exceeding $3000 a year for each family. They are of two distinct types: those who have the saving instinct highly developed and those who combine with a fair degree of prudence good professional or business ability. In this class are included the great army of successful entrepreneurs and the holders of all of the more important salaried positions. Its members have as a whole

very definite and persistent standards of living and although some of them through speculation, dissipation, or other cause, lapse into a lower class, the vast majority not only retain their positions, but provide for their children educational advantages and business openings which insure the latter's retention of the same or higher standards through life. The superior educational opportunities which children of this highest class enjoy in comparison with those belonging to lower classes begin at birth and continue to help them even after they are independently established. They have the constant care of loving and intelligent mothers and the best medical attendance through the trying illnesses of infancy. They are less apt to be forced in their development and more certain to be supplied regularly with nourishing food, pure air, and the other requisites to healthful growth. During the school period the superior opportunities of these fortunate children multiply rather than diminish. A large proportion of them do not go to the public schools, but receive instruction in less crowded private schools or from governesses or tutors at home. Moreover, their education is not interrupted, as is so often the case with children belonging to the lower classes, at the age of fourteen or fifteen. Being under no pressure to support themselves or to contribute to the family income, they may go through the high school or prepare for college, take a college course, and subsequently some professional or technical course, if they have a bent in either of these directions. As a result of these superior educational advantages children of this class are early fitted for the higher grades of work. Family influence insures them favourable openings as soon as they are ready for them, and the same influence often facilitates their advancement. Through all the years of preparation children of this most favoured class associate together and see little of children from other ranks of life. Unconsciously they come to accept the standard of living of their set as the only possible one. From every side they are impressed with the importance of a good income as a condition to happiness and with the advantages of property. Though some of them may show a tendency to recklessness when released from the restraints of school life, most of them have learned prudence without ever having tasted the fruits of

improvidence. They know that a certain income is indispensable to what they consider decent single existence and that a somewhat larger income must be assured before marriage is to be thought of. Young men mindful of the expenditures of their girl friends are restrained by a sense of chivalry from proposing marriage until they can provide advantages at least equal to those enjoyed at home. On their side young women in the group have definite ideas in regard to the cost of maintaining a household and are quite as prudent in their attitude towards matrimony. In consequence rash matches among young people of this class are few, and young men are usually well established before they incur the responsibility of providing for a family. This postponement of marriage results in a low birth-rate for the class as a whole, which, by lessening the number trained for the higher professional and industrial positions, helps to maintain the earnings which holders of such positions are able to command.

Children of the Middle Class

The second economic group consists of the great army embraced in America's "middle class." Although possessed of some property the members of this group rely chiefly upon their own exertions for their incomes, which range from $1500 to $3000 a year for each family. The different types found in this class include independent business men operating on a small scale, salaried managers, overseers, school-teachers, bookkeepers, clerks, etc., and skilled wage-earners commanding the year through upwards of five dollars a day. Like the members of the higher class they have definite standards of living, but these standards are lower. They know from experience that happiness is attainable on the smaller incomes that they are able to command, and their ambitions are usually limited to seeing their children equally well established in life. Unaccustomed to funded incomes they are little apt to acquire any considerable amount of property. The educational opportunities afforded children of this class are inferior in many respects to those of children of the wealthy. Although as well cared for during the period of infancy, they are sent too early to the public schools. Here the underpaid and overworked teachers do what they can for their large classes, but the very conditions of the system prevent that individual attention to

the special needs and aptitudes of pupils that is so important to the development of capacity. Education of this sort means shaping all to one common mould, and if it does not always result in mediocrity it is because its tendencies are counteracted by home and other influences. In the common schools, moreover, children of the second group come in contact less with children of well-to-do parents than with those whose surroundings are even humbler than their own. Instead of becoming acquainted with higher standards of living they are confirmed in their impression that their own are the best.

Their Choice of Occupations

Either from necessity, or because they undervalue the training offered by high schools and colleges, parents in this second class usually withdraw their children from school at the age of sixteen or seventeen. Boys are now ready to begin earning something and the choice of an occupation has to be made. At this critical period the lack of broad acquaintance with business opportunities and of business influence on the part of parents tells heavily against their sons. With their limited horizons parents of this class are too apt to choose openings where earnings begin at once rather than those calling for a prolonged period of apprenticeship. As a rule they shrink from risks, preferring modest security to the uncertain prospect of large achievements. This attitude leads them to select for their sons salaried positions, necessarily near the bottom, calling for the performance of routine tasks which have little educational value, and from which they have little chance of rising to the higher positions of trust and responsibility to which the larger salaries are attached. Thus at the age when children of the higher class are leaving colleges and technical and professional schools, or have made considerable progress towards mastering the details of complex businesses, those of the middle class have already lost the precious years when they might have been fitted for something superior to the positions in which their fathers are growing old. Like their fathers they marry early and rear families to the standards of living that they have made their own.

Standards of Living Not Rigid

In a progressive country like the United States many exceptions must be made to the above description. Standards of living are flexible and boys of exceptional ability frequently

rise from very humble beginnings to the highest posts in the business world. These exceptional careers are more interesting and naturally attract more attention than those which are more usual and typical, but they should not be allowed to obscure the fact that children in the two classes described enjoy unequal advantages and that the great majority must be satisfied to hold their own in the class to which they were born. For one man who breaks with the standards of his class and rises to a higher standard there are a hundred who follow in their parents' footsteps. This does not mean necessarily that the standard of living of each class is fixed and rigid. The whole group may be moving up or falling back together. It means simply that differences in standards of living and the conduct that results from them are largely responsible for the perpetuation, generation after generation, of the striking differences in wages that have been described.

Children in the Third Grade

The third class embraces skilled workers, both hard and soft handed, who depend largely on their wages, low salaries, or the produce of their farms for their maintenance and whose yearly incomes range from $600 to $1500 to the family. Its members are as a rule sober and industrious. They are interested in their work and it is sufficiently individual to permit them to take pride in its accomplishment. At the same time the range of their ambitions is narrow and their standards of living make them satisfied with the incomes they receive. In comparison with members of the next higher class they tend to marry somewhat earlier, to have somewhat larger families in proportion to their means, to withdraw their children from school somewhat sooner, and to be somewhat less mindful of the latter's ultimate advantage in choosing occupations for them. The way in which these tendencies react upon the individual capacities of members of this group and prevent any considerable number of them from becoming competitors for the positions open to the higher classes has been sufficiently suggested in what was said of Group 2.

The Fourth Grade

To the fourth economic group belongs the numerically large class of unskilled workmen. Their earnings vary somewhat at different seasons, but may be put at from one to two dollars a day for the North Atlantic States. The tasks which unskilled

workmen perform depend mainly upon physical strength and endurance and are easily mastered. Their hours are long and their labour exhausting, and in consequence their lives afford little opportunity for attention to other than the merely physical wants. Early marriages are facilitated by the fact that the full earning power of men of this class is attained at nineteen or twenty, and that their standard of living opposes no barrier so long as work is steady and wages are certain. Children come in this class before the parents have themselves reached maturity, and their number, and the rude way in which the family is compelled to live, prevent the mother from giving them the attention that their best interests demand. As these children approach the age when they can go to school they are allowed to spend more and more time on the streets and to acquire that precocious knowledge so destructive of the idealism natural to childhood. In school their progress is retarded by the lack of that stimulus and encouragement on the side of parents that is so helpful to children reared in more fortunate circumstances, and just as they are getting old enough to form judgments for themselves their help is needed at home, or jobs are secured for them, and the formal part of their education is brought to an abrupt close. Made bread-winners thus early in life, they are apt before they are twenty to find the restraints of home irksome, and to resolve to create homes for themselves as soon as their earnings come up to the low standard to which they are accustomed. Acting on such resolutions they follow in the footsteps of their parents, as their children are likely to follow in their footsteps. Thus for unskilled workmen, as for the three higher classes considered, the standard of living and the conduct which it imposes effectually bar any but the exceptionally gifted or exceptionally fortunate from training themselves to do work of higher grade. Their competition for employment is limited to that grade of work to which they were born, and though some in each generation break the bonds that hold them down and pass from their group to the one just above it, the number is too small to close entirely the gulf that divides the earnings of representative members of the two grades.

The fifth and last class into which industrial society has been

The Fifth Grade

divided includes those unfortunates whose average earnings to the family are less than one dollar a day. This is the class sometimes spoken of as the "submerged tenth." Its members are without definite standards of living, never having acquired any or having been compelled to give them up. They are prevented by some moral, mental, or physical disability from getting on in the world, and unless that disability can be removed and they can be won back to one of the four classes that have been described, they must inevitably sink to the level of social dependents. Every community has some representatives of this class and recognises its uplifting as a social duty. As the result of the efforts that are being put forth and of the high death-rate to which the class is subject, its members are constantly changing. Little can be said of it pertinent to this discussion except that those who descend to it from above are more numerous than those who rise out of it. Dependency and death are the goals to which most of its members are drifting, and the only hope of betterment lies in the gradual elimination of those circumstances which cause this class to be recruited year after year from the higher classes.

Non-competing Groups

§ 139. The conclusion of this review of the habits and standards of different groups of workers is that the industrial population is divided up into a number of classes among whose members competition is so fitful and irregular that we may without serious error follow Professor Cairnes, the English economist, in styling them "non-competing groups." Partly because the hereditary qualities required are rare, but even more because few besides those born into the highest economic class who have these qualities can obtain the educational advantages necessary for their development, the number of individuals competent to fill the higher executive, professional, and artistic positions is exceedingly limited in comparison with the demand for them. The earnings of men in these positions remain therefore many times higher than those received in inferior posts. Similar limitations on the power to compete perpetuate the higher earnings of each successive grade of workers in comparison with those in the next lower class, and together they make the phenomenon of one man receiving $100,000 a year for his services and another receiving no more

than $100 so common, even in a country where there are no restrictions on labour and where the common schools are free to all, that it scarcely excites comment or seems to require explanation.

Reasons for Failure to Invest More Capital in Education

But, it may be asked, if education is so important a cause of the differences in the earning powers of different men, and if acquiring education is simply one way of investing capital for a future return, how does it come about that more capital is not invested in this way? The answer is simple. Those to whom the education would be invaluable are too young or too ignorant to appreciate the fact or are without the capital to invest. Their parents are also without capital and have, moreover, a less direct personal interest in the result. Men with capital, on the other hand, do not invest it in the education of other people's children, except as a charity, because there is no form of contract under which they could claim a part of the return.

Those needing education cannot, as minors, legally contract, nor can their parents bind them, except within certain limits, during the period of their minority. It follows that for all but the children of the wealthy such education as is enjoyed must be public and free. For the community as a whole, the investment of capital in educational opportunities tending to add to the industrial capacity of boys and girls is a certain means of adding to the collective wealth. Capital so used, especially to inculcate higher standards of living and efficiency among children of the poor, yields a princely return and will continue to do so until the present inequalities disappear. It is therefore to the community, and to improvements in the free schools, free colleges, and free universities that we must look for the removal of the disadvantages under which children of the lower classes now labour. To remove them completely it will be necessary not only to improve schools, colleges, and universities covering all branches of technical and professional training, but to raise the standards of parents so that they shall be eager to have their children enjoy the best advantages and to provide in some way for the maintenance of children whose parents cannot afford to support them during their years of study and preparation. The mere mention of these needs re-

enforces what has been said of the present lack of equal educational opportunities.

Conclusion

Summing up the results of this long analysis, we must conclude that the industrial population consists of non-competing groups of workers whose differences in fortune and in standards of living are reflected in unequal educational opportunities which serve to perpetuate, generation after generation, the differences in wages explained in previous sections. The picture drawn appears somewhat exaggerated for the United States at the present time, because the country is comparatively new and undeveloped. The exploitation of natural resources still offers a wide field for the adventurous and prevents, while it continues, that rigid stratification into economic classes that is found in the older countries of the world. But such a stratification already appears in the United States and it will show itself more and more clearly as the natural resources of the country come more completely under private ownership, unless the tendency in this direction is successfully opposed by a broad and vigorous social policy. In spite of it there are even in the older countries referred to many individual exceptions to the rule that children remain in the economic class to which they were born. Persons of great native ability rise to positions suited to their capacities despite all obstacles. On the other hand, all advantages seem wasted on other persons who from innate stupidity or perverseness are incapable of deriving benefit from them. These exceptions are of much more significance to the moralist than the more commonplace careers that have alone received attention in the preceding analysis. They justify the familiar assertion that each one's success in life depends mainly upon himself, but they do not alter the more fundamental truth that the sort of self one is depends upon heredity and education and that differences in educational opportunities are a chief cause of the differences in wages which it is the task of economics to explain.

The Determination of Marginal Wages

§ 140. The causes of differences in rates of wages and of their persistence, generation after generation, have been explained in the preceding sections and it remains now to account for the earnings that are enjoyed by marginal workmen, which are the minimum from which all higher earnings are

measured. The thesis that we have proposed to defend is that under conditions of free, all-sided competition the earnings of marginal, as of other, workmen will correspond accurately to the contributions which they make to production. To gauge this contribution we must pass now to the discussion of interest, the last share in distribution. The different factors in production co-operate in all productive processes. The product is a joint-product and we can determine the share of it that is economically ascribable to each factor only after we have clearly perceived the basis on which the claim of each factor rests. In the next chapter we have to explain interest and diferences in rates of interest by an analysis similar to that we have applied to profits, rent, and wages, and then to consider how the comparisons are made by which the proportionate share of each factor is determined.

REFERENCES FOR COLLATERAL READING

**Marshall*, Principles of Economics, Book VI., Chaps. III.–V.; **Clark*, Distribution of Wealth, Chaps. VII. and VIII. and XI.–XIV.; **Taussig*, Wages and Capital, Part I.; *Walker*, The Wages Question; *Schoenhof*, The Economy of High Wages, Part I.; **Pierson*, Principles of Economics, Part I., Chap. VI.; *Davidson*, The Bargain Theory of Wages; *Thompson*, The Theory of Wages and Its Application; **Adam Smith*, Wealth of Nations; Book I., Chap. VIII. and Chap. X. Part I.

CHAPTER XIV

DISTRIBUTION: INTEREST

Interest Defined

§ 141. Interest has already been defined as what is paid for the use of capital. From the point of view of distribution it is the share of income that is assigned to capital goods, or more properly to the owners of such goods, for the part the latter play in production.

Interest, Rent, and Wages

In one of its aspects interest resembles rent. Like the latter it is a share of income assigned to material aids to production. Unlike rent, however, it is not paid for the use of unproducible gifts of nature, but for products of human industry. As explained in Chapter VII. the creation of capital goods involves, in addition to the factors that co-operate in all production, saving, abstinence, and waiting. Capitalists contribute to production in these ways just as truly as do workmen through their efforts. In this aspect interest more closely resembles wages. Both reward men for services they render in connection with production.

Differences in Rates of Interest

In the explanation of interest it will be convenient to begin by showing why different rates of interest are paid for the use of the same amounts of capital, just as we began the explanation of wages by discussing causes of differences in wages. The causes determining marginal interest and the relation in which it stands to wages will then be considered.

The Mobility of Capital Depends upon the Replacement Fund

§ 142. Before attempting to explain the causes of differences in rates of interest it will be well to make clear the forces which tend to equalise the earnings of all kinds of capital goods in competitive industries. The almost infinite variety of capital goods and the diversity of the services they render in production were considered in Section 74, Chapter VII. Some capital goods are fairly mobile and may be assigned readily to the particular branch of production in which they are in greatest demand. Most of them, however, are more or less

specialised and seem to lack the plasticity necessary to free movement and free competition. This is the situation as it presents itself to the observer taking an instantaneous photograph of capitalistic production. But instantaneous photographs of shifting, changing objects are seldom very lifelike, because they fail to represent the movement which is their essential characteristic. To be understood, capitalistic production must be studied not as it appears at any particular moment, but as it appears over a considerable period of time. It is not an instantaneous photograph, but a " moving picture," or a series of successive impressions that is required. Every capital good has its distinct life history. By itself it has little mobility, but, through the fact that it comes into being, wears out and is replaced, it allows great mobility to the capital transiently embodied in it. No capital good is ever called into being unless the investor or entrepreneur responsible for its creation believes that it will earn not only the current rate of interest on the sum invested in it until it is worn out, but in addition a fund for its own replacement. In the bookkeeping of the industrial world a part of the earnings of capital goods is regularly set aside to replace these goods. Circulating capital destroyed in a single use must completely replace itself as well as earn interest in that use. Fixed capital which may be used for some time has a longer period in which to replace itself, but in connection with it too the process of replacement is in constant operation. The constantly accruing replacement fund which flows back to investors and entrepreneurs is completely mobile. It appears as a certain amount of free purchasing power which may be used either to replace the capital goods in process of destruction with exactly similar goods, or to call into being quite different capital goods, as the judgment of the entrepreneur may determine. At any given moment the amount of this mobile replacement fund is small. In order that delay and loss may be avoided, its destination must be decided upon even before it arises, and in consequence it seldom accumulates in the hands of investors and entrepreneurs, but merely flows through their hands on its way to embodiment in new forms of capital goods. Nevertheless the existence of this constant flow of mobile purchasing power serves, over con-

siderable periods of time, to give great mobility to capital as a whole. Through its agency the limited fund of capital may be embodied at each period in just those forms of capital goods which industrial society most requires. If inventions are being made, the approved appliances may gradually be substituted for those which are old-fashioned and out of date. If population is increasing rapidly, for costly machines requiring few workmen may be substituted more numerous and cheaper machines requiring more workmen, and if the substitution is made slowly the loss resulting may be inappreciable. On the other hand, if the population is stationary and the capital fund is itself growing, the place of the hand implements, which were previously the forms of capital goods most needed, may gradually be taken by machines which can be operated by fewer workmen. Through these and similar changes, the constantly accruing replacement fund helps to adapt a community's capital to a community's need for capital goods.

Differences in Rates of Interest Eliminated by Competition

§ 143. If industrial changes should be suddenly suspended and opportunity given for industrial forces to come to an equilibrium, different rates of interest would be found to prevail in different branches of production and even in the same branches for different firms. Some of these differences would be apparent merely, being due to the larger allowance needed for the replacement of capital goods where they are liable to accidental destruction. Others would be genuine, and it will be instructive to observe how they would disappear as society approached the state of normal equilibrium.

Differences in the Same Branch of Production

Consider first differences among different firms in the same branch of production. One firm has preceded all others in putting in some superior machine or other form of capital, and this gives it higher earnings until others gradually introduce the superior machines into their plants also.* But competitors are always trying to keep their plants up to the highest point of efficiency. If invention and improvement in processes were suspended it would take but a short time for the very best

* These higher earnings are called "profits" in Chapter X. in conformity to business usage. In describing them here as "interest" we simply go a step further back and attach them to the superior capital goods to which they owe their existence.

equipment to be introduced into all freely competing establishments. Those unable to modernise their processes would be forced into other industries as society approached the state of equilibrium. They could not sell at the normal price and continue to make the wages of management they might secure in other industries. Allowing time enough for the process, therefore, it is evident that in the absence of patents, or other monopoly conditions, the earning power of capital goods in different competing establishments would be equalised.

Differences in Different Branches of Production

But between different branches of production differences might still persist. Shoe machinery might, for example, be earning more than textile machinery. But if this were the case, one or both must be earning less or more than the current rate of interest for capital generally. If shoe machinery were earning more than the current rate, competing shoe manufacturers would tend to enlarge their plants to secure the extra interest on a larger investment. By so doing they would, on the one hand, make drafts on the country's free capital tending to enhance the rates of interest other entrepreneurs would have to pay to secure the capital needed to keep their plants intact, while, on the other, they would tend to depress the price of shoes by increasing the supply and in this way to lessen the total to be divided among all the shares in distribution in this branch of production. As the result of action and reaction the extra earnings of shoe machinery would disappear. If, on the other hand, the difference was due to the fact that textile machinery was earning less than the current rate in industries generally, the conditions would be favorable to a reduction in the number of textile plants and the gradual release of capital for other investments. This would tend to raise the price of textiles and give larger returns to textile machinery, while it at the same time reduced the relative earnings of capital goods in other industries by permitting a slight expansion. As society approached the state of normal equilibrium, differences in interest rates would be less common and less extreme in consequence of such changes and adjustments, and before the normal state was reached they would have entirely disappeared. Only on this condition could a permanent equilibrium be established, since any difference in interest rates is itself a reason for

change. When the state of equilibrium was reached, capital goods would be so distributed that each branch of production would have just its quota of capital embodied in the best forms of capital goods known to entrepreneurs, and no more. The earnings of each unit of capital in each capital good would be kept the same so long as the equilibrium continued as those of every other, and the division of the free-flowing replacement fund among different branches of production would be simply the automatic restoration of the wastes of production, accomplished as perfectly as is the restoration of the wastes of the human body through the processes of life.

Causes of Differences in Rates

§ 144. The above analysis of the process by which differences in rates of interest would be eliminated, if industrial changes were completely suspended, helps to explain why in actual industrial society differences are found. To the extent that the mobile replacement fund that has been described fails to multiply forms of capital the moment they are needed, or to withdraw other forms the moment they are superfluous, there is opportunity for differences in the earning power of capital goods. The circumstances which cause such differences to arise will now be briefly indicated.

Monopoly

The most familiar ground for differences in the return from different investments is the presence of monopoly. The monopolist deliberately restricts the output of the monopolised product so that the returns to the capital and labour he employs exceed those to be realised in competitive industries. We have designated the surplus return as monopoly profit, but since it frequently comes to investors in the form of dividends it is often thought of as a part of interest. In a sense monopoly profit is a part of the share of income ascribed to the capital goods which figure in monopolistic production. This is particularly true when the basis of the monopoly is a patent. Patented machines do earn the larger returns which they enable their owners to secure. At the same time the reason for the larger earnings is always the monopoly, and it conduces to clearness to consider dividends from investment in monopolistic enterprises as made up in part of interest and in part of monopoly profit.

The close resemblance of interest on permanent improve-

ments to rent has already been commented upon. Such improvements will not be made unless there is good reason to think they will afford at least the current rate of interest, but after they have been made the capital invested becomes a part of the land itself and receives income in obedience to the law of rent. If the anticipations of the investor are exactly realised, such capital goods afford an income corresponding to the current rate of interest, but only so long as industrial conditions remain undisturbed. Prospectively regarded such an income is interest, retrospectively it is rent.

Interest on Permanent Improvements

Every specialised form of capital is subject to a certain extent to the same limitations as permanent improvements. Consider, for example, a factory which it takes a year to build and which cannot, without considerable loss in value, be turned to account in another branch of industry than that for which it was designed. The investment of capital in such a factory will only be made in case there is good reason to expect that it will earn at least the current rate of interest. But before the factory can be available for production a year must elapse. In this time changes may occur. The prudent investor will hesitate to transform his free capital into a factory until there is a margin of prospective return over and above the current rate of interest to compensate him for the risk he incurs. It follows that until the earnings of specialised capital goods exceed, to some extent, the current rate of return on free capital such goods will not be multiplied. Competition among investors stops before the earnings of such goods are reduced to the general level. On the other hand, after the factory has been erected, the capital invested in it can neither be withdrawn nor allowed to remain idle without considerable loss to the investor. If industrial conditions change so that the share of income assigned to the factory diminishes, the investor must make the best of the situation. Instead of getting the interest he expected, or even the current rate on free capital, he may obtain only one-half the current rate or even less, and yet it may pay him better to keep the factory in operation than to close it or try to turn it to some other use. Under such circumstances the earnings of specialised capital goods may depart widely and for considerable periods from the cur-

Specialised Forms of Capital have Little Mobility over Short Periods

rent rate of interest. Factories and other capital goods whose creation requires a good deal of time may earn more than the current rate of interest for months and even for years. Specialised capital goods, which wear out very gradually and require each year but a small allowance for replacement, may, on the other hand, in the face of adverse conditions earn less than the current rate for equally long periods. In communities in which changes in the demands of the market and in the methods of production are constantly occurring, variations from the normal rate of interest will be so common as to obscure the fact that competition tends to establish one uniform rate of interest for all capital goods. When competition is free, however, this tendency is always active, and even in a country as progressive as the United States it confines variations in most investments within narrow limits.

And are Consequently Liable to Depreciate

As already pointed out, the business community anticipates the equalising influence of competition by revaluing specialised and fixed forms of capital goods, so that their prices always stand in about the same relation to their earnings. The actual capital invested in an enterprise ceases to measure the value of the capital goods used in connection with it as soon as the earning power of these capital goods is established. Free capital goods must continue to command the current rate of interest or be diverted to other uses. Their value is accordingly fairly stable. Specialised capital goods cannot be diverted easily and hence must depreciate heavily if the enterprise proves less successful than was anticipated. Such depreciation finds its ultimate limit in the value of such goods for other industrial uses. In the case of highly specialised goods this value may be only that of the materials of which they are made.

Differences in Risk of Loss

§ 145. Another cause of differences in interest rates also connected with differences in the risks involved in different investments, results from the danger of accidental destruction to which some capital goods are exposed. Whenever this danger may be provided against by the machinery of insurance, the difference figures simply in the larger replacement fund which must be earned in addition to current interest by the capital goods affected. In many cases the danger is too irregular and

uncertain to be insured against, and the increased interest needed to attract capital into the precarious investment depends upon the temperament of investors. Conservative people will be deterred by the fear of loss from investing at all in such enterprises. More reckless and optimistic capitalists may be induced to take great chances by the promise of only a slightly larger return than the current rate of interest.

Differences in Social Esteem

Besides differences in risk, differences in the social esteem in which different investments are held may cause differences in rates of interest. For example, in most countries the business of the pawnbroker is in ill repute and in consequence competition in that business is confined to a limited number of persons. The men who have the shrewdness and callousness to public opinion which such enterprises require are able to make the capital they control earn large returns. These should be attributed in part to the high wages of management which such disagreeable occupations command, but are also in part due to the capital itself. If more capital were available for such businesses the incomes of pawnbrokers would be materially reduced. Unfortunately capital is so easily detached from the person of the owner that this consideration has less effect on modes of investment and rates of interest than might be expected. A striking illustration of the lack of a sense of responsibility which those having capital to invest often evince was brought to light recently in New York City when it was discovered that a prominent church was deriving a part of its revenues from the ownership of some of the worst tenement houses in the city. When those charged with funds intended to further the mission of Christ can permit them to be invested in insanitary and immoral tenements, not much regard for public welfare is to be expected from ordinary investors.

Differences in Rates between Different Sections

In addition to the differences in rates of interest earned in different investments and by different kinds of capital goods, there are differences among different sections. Although much more readily transported to the best market than labour, capital also is timid about venturing far from its source of origin. Capitalists usually feel that they can better estimate the risks involved in investments near home than at a distance.

In consequence of this feeling capital tends to be concentrated in the centres where men of wealth live, and new and backward communities are able to command less than their proportionate share of the available capital equipment. Instead of there being one rate of interest on free capital in a country like the United States there are a variety of rates, ranging from the low rates found in the large cities and the manufacturing sections of the North and East to the high rates prevailing in the agricultural and mining regions of the South and West. A variation of from two to three per cent. between the rates of interest regularly charged for equally good loans by banks in New York City and Arizona roughly reflects the difference in the earning power of capital goods in the two localities. As different sections are brought into more intimate business relations the supply of capital tends to distribute itself more equally over the entire industrial field and such differences become less marked. As in the case of wages, differences in rates of interest among different countries are likely to persist long after differences among different sections of the same country have become insignificant.

Interest on Money

§ 146. In the foregoing discussion interest has been spoken of as the earnings of capital goods. An equally familiar aspect of it is in connection with the borrowing and lending of money or purchasing power. Interest for the use of purchasing power presents no exception to the general statement that it is the share of income earned by capital goods, since pieces of money are themselves such goods, but the reasons for the payment of interest for the use of money require special explanation. The whole problem is complicated by the fact that under certain limitations credit, or mere promises to pay money made by individuals or banks in which the public has confidence, may serve the same uses as money and like it command interest. To avoid the discussion of these complications until we are ready to consider the subjects of Money and Credit, it will be assumed in this section that forms of credit play no part as a medium of exchange, that the only money used is that composed of the standard monetary metal and that the coinage policy of the community is similar to that of the United States in that it maintains a constant parity in value be-

tween standard coins and the metal they contain. Under such circumstances money would be simply one of the goods in general use that was singled out to serve as the medium of exchange, but whose value was determined by the same considerations that affect the values of other goods.

Reasons for the Payment of Interest for the Use of Money

The efficiency of money as the medium of exchange depends upon the readiness with which it passes from hand to hand, and hence the best and most economical money is that which circulates most freely. Such money contributes to production as truly as do the tools, machines, and other capital goods which were made prominent in the preceding sections. Without it the exchanges of goods necessary to the continuance of the division of labour which adds so much to production would be seriously restricted. As the tool of exchange, money is accepted readily for other capital goods, and for stocks, bonds, and mortgages on which interest is paid. As long as this is the case and capital goods, or stocks, bonds, and mortgages earn interest, money must also command interest. It is not only itself an important capital good, but it is the medium by means of which any and all other capital goods may be acquired. The second circumstance causes it always to possess a derivative earning power corresponding to the current interest rate earned by capital goods generally.

Money or Purchasing Power the Form first Assumed by the Replacement Fund

In a community in which all goods are bought and sold for money, money is the form in which first appears not only all income, but also the replacement fund which reimburses the capitalist for the gradual destruction of the capital goods in which his means are embodied. The way in which it is spent determines on the one hand the direction to be given to the machinery of production, and on the other the forms of capital goods to be added to this machinery in place of the capital goods that are destroyed in each productive period. As money flows from the buyers of goods to sellers the destination of the greater part of it is already determined. It pays bill and debts that have been contracted during the process of production, secures necessary materials, or effects indispensable repairs of plant and equipment. A part of it only is free to be spent or invested as the judgment of the entrepreneur may determine. This part constitutes the free fund of purchasing power which

serves, as explained in a previous section, to give a high degree of mobility to all capital.

Interest on Money Loans Made Uniform in each Money Market

The rate of interest that will be paid for the use of money, or purchasing power, is kept uniform within each money market in the same way that the prices of identical goods are kept at a parity in a goods market. Individually borrowers of money wish to pay as little as possible, but they are willing to pay up to a certain rate rather than not secure a loan. Individual bankers and other lenders wish to get as high rates as possible, but will accept rates down to a certain point rather than have their money idle. Bankers and other lenders propose rates just as goods-dealers fix prices for goods. Borrowers indicate by their eagerness in accepting the rates named whether they are low enough to effect the loan of the purchasing power available for the purpose. As the result of bargaining and competition the rates on each class of transactions are at length adjusted, and each lender is forced to accept about the same rate as every other.

Differences in Risk Cause Differences in Rates of Interest

In the case of interest on money loans there are differences in rates corresponding to the differences in the earning power of capital goods and due to the same general causes. Since money commands interest because it stands for the capital goods for which the borrower proposes to exchange it, the risks connected with investments in capital goods attach also to loans of money. The chief difference is that the borrower of money usually pledges himself personally to repay the loan even though the business enterprise for the formation of which he secures it turns out badly. If he is a man of means or of unquestioned honesty and business ability this personal guarantee will serve to offset a large element of risk in the enterprise to be furthered by the loan. If, on the other hand, all his wealth is embarked in the single venture and its failure is likely to cause his own bankruptcy, the personal guarantee will be of little value and the lender will become practically a partner in the enterprise. Because of such differences in the risks involved in different transactions and other circumstances discussed in Chapter XVIII., the rates of interest on money loans vary within wide limits.

§ 147. In the preceding sections the causes of differences in

Differences in Rates of Interest Less Extreme than Differences in Wages

the rates of interest have been discussed and the process has been traced by which the earnings of all goods would be levelled to one uniform rate in a society brought to a state of normal equilibrium. Such a consummation is much nearer at hand in actual industrial society than is one uniform rate of wages. Capital goods are impersonal. As they wear out they create a free replacement fund which is constantly available to equalise their earning powers. Moreover, capital passes much more readily from one part of a country to another than does labour. If industrial changes should be completely suspended for but a few years, substantial equality in interest rates might be expected to establish itself over a wide region. These facts cause economists to use the expression "general rate" in reference to interest, as they would not be warranted in using it in connection with wages. By it is meant the rate which economic forces tend to make general. In the following discussion we will use that expression, or the more precise phrase "marginal rate," as convenience may dictate. The precise rate of interest is, of course, not in question in this section, but rather the causes which unite to make the rate high or low and to determine its relation to other shares in distribution.

How Marginal Wages and Marginal Interest are Determined

We are now prepared to consider the relation between the different shares in distribution and to prove our thesis that the general or marginal rate of interest and the marginal rate of wages or the rate of wages of marginal workmen tend, under conditions of free, all-sided competition, to equal the contributions which the respective factors make to production. To simplify the discussion we may assume that free competition has eliminated net or competitive profits, as it constantly tends to do, so that the reward of entrepreneurs is confined to their wages of management, which obey the same principles as wages generally. Monopoly profits are, of course, excluded from the problem since their very existence is inconsistent with the free competition assumed. Even were this not the case we should be justified in ignoring them in connection with the present problem, since the wage and interest rates paid for workmen and capital goods in monopolistic enterprises are usually adjusted to the rates paid in competitive businesses. Entrepreneurs controlling monopolies wish, as much as other entre-

preneurs, to secure their productive factors as cheaply as possible. They could afford often to pay very high wages and interest at the expense of their monopoly profits, but as a matter of fact they usually pay only a little if at all higher rates than those fixed by general, that is, competitive, conditions. It follows that the explanation of wages and interest that applies to competitive industries will apply also, so far as these shares are concerned, to monopolistic industries.

Marginal Rates may be Studied at the Margin of Cultivation

The explanation of rent given in Chapter XII. leaves its relation to wages and interest in no uncertainty. It is a differential return due to the superiority of the land or other natural agent used in the given productive enterprise in comparison with marginal land devoted to the same purpose. At the final margin of production it does not appear at all; at other points it takes the surplus due to natural conditions and in no wise affects the shares, wages and interest. Within each labour market the same rates of wages, approximately, are paid for the same grades of labour, whether rent happens to be another item of expense which the entrepreneur incurs or not. The same statement holds true of each market for loans of capital. It follows that an explanation of the causes fixing wages and interest at the no-rent margin of production is a complete explanation. The same forces are active in every other part of the industrial field and serve to determine wages and interest in practical independence of rent.

Entire Return at the Margin Constitutes Wages and Interest

With profits eliminated and rent explained in entire independence of the other shares, there are left to be analysed the causes which determine the division of income between wages and interest. At the final margin of production in competitive enterprises the entire product is divided between these two shares, and before we attempt to explain the law of division it will be well to recall the influences which determine the amount of this joint return.

The Circumstances Determining the Amount of the Joint Share

§ 148. If the joint share which goes to labour and capital at the margin of production includes the entire product which free land, labour, capital, and the organising ability of entrepreneurs produce at the margin, its size depends obviously upon all of the factors that were discussed in the chapters on Production. Of primary importance is the quality of the land and

the natural agents which are used at the margin. In a country like the United States, which is abundantly supplied with land and natural resources in proportion to its population, the lands, mines, forests, fisheries, sources of water power, etc., which are used at the margin are rich and afford large returns to the labour and capital applied to them. Up to a quite recent period in the history of America, improvements in transportation facilities and the discovery of new sources of natural wealth have kept pace with the growth of population and of capital and the margin of production has been lowered but little, if at all. It has been from the first discovery of the country very much higher than the margin of production found in Europe, and this has been a chief cause of the high earnings which labour and capital have commanded in the New World. Wages and interest have been higher because labour and capital have been more generously assisted by nature in marginal industries where this assistance has been gratuitous.

The Influence of Entrepreneurs

Next to the location of the margin of production, the efficiency with which labour and capital are correlated in production is the most important influence determining the amount of their joint share. This depends upon the intelligence and enterprise of entrepreneurs. The United States is fortunate in this regard also. Its captains of industry compare favourably with those of any other country and it is doubtful if industrial organisation is anywhere more highly developed. Through efficient organisation labour and capital succeed in producing and earning more than they could if less intelligently directed.

Qualities and Quantities of Workmen and Capital Goods Important

Other factors influencing the result are the industrial capacity of the labourers as individuals. The more ability and energy they put into their work the larger will their return be. Equally important is the efficiency of the forms of capital utilised in production. If improved tools and machinery, convenient and sanitary buildings, etc., are the forms into which the community's capital is thrown, the returns will be larger than if poor implements and badly planned structures predominate. The efficiency of the forms of capital used depends upon the progress that has been made in invention and discovery. In this field, also, the United States compares favourably with other countries. Its capital equipment is not perhaps quite as

large in proportion to its population as is that of some older countries, but it is up-to-date and efficient. By its aid the product shared between labour and capital in marginal industries is further increased.

Both Wages and Interest High in the United States

Through these influences, and all of the others discussed in the chapters on production, the joint share of income which goes to labour and capital is determined. If the conditions are favourable, as they unquestionably are in the United States, the joint share will be large. The terms of its division between labour and capital themselves determine whether wages will be high relatively and interest low, or interest high and wages low, or both wages and interest high together. The last condition is that found in the United States in comparison with conditions in European countries.

Workmen and Capital Goods Compete As well as Co-operate

§ 149. We are now ready to discuss the causes which determine the division of income between wages and interest. As each is paid for the part which the respective factors, labour and capital, play in production, we should expect the amounts paid or the rates of wages and interest to be in proportion to the importance of the services which each renders, and this is in fact the case. As already suggested, workmen and capital goods not only co-operate in production, but compete. At some points in every industry entrepreneurs have the alternative of using certain grades of labour or certain forms of capital for the accomplishment of a desired result. Lifting may be done by capital goods in the form of elevators, cranes, etc., requiring only human guidance, or by workmen laboriously climbing ladders with loads on their backs. Moving may be accomplished by men trundling wheelbarrows or pushing tram cars, by means of horsecars, or by steam railroads. Similarly in manufacturing, the tool-equipped workman is ever a competitor of the automatic machine. Even in agriculture steam plows may be used in place of horse plows with a considerable saving in labour, and harrowing, planting, reaping, and other processes may be performed through the use of machines of varying degrees of complexity, or by hand tools. In deciding between capital goods and workmen at these competing points, the guiding principle always acted upon by entrepreneurs is to choose that combination of factors which, in proportion to its

efficiency, is cheapest. Workmen are substituted for capital as long as it pays to make the change. At other points capital goods are substituted for labour up to the same limit. Every such substitution tends to enhance the price that must be paid for the use of the preferred factor, since it involves increased demand for it without any change in its supply. It at the same time tends to lower the price that must be paid for the factor that is rejected. Its supply is increased without any corresponding increase in demand. In actual society, where changes are constantly occurring not only in the quantities of labour and capital, but in the methods of production and the kinds of capital used, these substitutions occur constantly and the distribution of labour and capital is far from being at any one time what it is tending to become. If changes were to be suspended, substitutions of workmen for capital and of capital goods for labour would continue for a time, but each substitution would help to bring society nearer to the state of normal equilibrium. When that state was reached capital goods would continue to be used for many purposes for which they alone are suited, and workmen would continue to be employed at many tasks which could not possibly be done by the most perfect machinery or other capital goods. At other points capital goods would be doing tasks that might be done by labour, while workmen would be doing things that might be effected through capital. For some of these tasks one or the other would be distinctly preferable so long as wage and interest rates remained as they were, and therefore they would be little involved in the substitutions made after changes were suspended. In the case of others the choice between the factors at current rates of wages and interest would be a very nice one. Entrepreneurs would continue for some time to make substitutions at these points, and these substitutions would serve for some time to cause changes in wage and interest rates which would make further substitutions desirable. The range of these changes would contract steadily as the state of normal equilibrium was approached, and when that state was reached capital goods would be so assigned that their net addition to the product just covered the rate of interest that had to be paid for them, and workers would be so assigned that they received just what they produced also.

This Competition Leads to Comparisons and Substitutions by which Wage and Interest Rates are determined

Only on this condition could there be a state of equilibrium, because paying to owners of capital less than capital goods produced, or to workers less than they produced, would involve a fourth element in distribution, an extra profit to the entrepreneur. Competition eliminates this extra profit only by bidding up wages and interest until each corresponds accurately to the addition that workmen and capital goods contribute to the product. The measurement of these additions economically ascribable to workers and capital goods is effected very simply by means of substitutions. Capital goods are substituted for labour and workmen are substituted for capital down to a margin of indifference, where both factors are equally cheap at prevailing rates of wages and interest. At these points wages paid for labour secure the same product as the same sum spent on interest for capital. The productiveness of the two factors is compared and each receives the exact equivalent of what it contributes to production. *The law which determines the division of the product between labour and capital in competitive industries for a society in a state of normal equilibrium is, therefore, that each receives the share that it produces.* As all capital goods will have the same earning power, the earnings of the goods at the margin of indifference will fix the general rate of interest. All grades of workmen will not be compensated equally, but as their earnings are arranged in a scale, in the manner explained in the last chapter, the determination of the earnings of marginal workmen will serve indirectly to determine the wages of all.

The Law of Distribution for a Society in the State of Normal Equilibrium

Although rarely exactly established, and never maintained for any great length of time in actual industrial society, the margin of indifference between labour and capital that has been described is of the greatest practical consequence. The efforts of entrepreneurs are constantly directed towards using capital goods only down to the margin of indifference on the capital side, and towards employing workmen only down to this margin on the labour side. To overstep it in respect to either is to incur loss, while on the other hand failure to push the use of the productive factors to this limit in each branch of production is to fall short of the competitive ideal which distributes labour and capital over the industrial field in exact pro-

The Same Law Applies Roughly to Actual Industrial Society

portion to the need there is for them. In actual industrial society the use of additional capital goods here, and the employment of more workmen of a given grade there, or the withdrawal of capital goods or the discharge of workmen, have for their object better conformity to the ideal arrangement of labour and capital that has been described. At any given time a rough approximation to the ideal towards which competitive forces are always straining is actually presented, and comparisons between the productiveness of quantities of capital and quantities of labour are being made by entrepreneurs in every branch of production and are determining their business decisions. Thus we conclude that the rate of interest earned by capital goods and the rate of wages earned by marginal workmen tend to correspond to the contributions which the respective factors make to the product of industry at the margin of indifference where their contributions are measured, and that these marginal rates are standards to which all other rates are adjusted.

The Law of Distribution Illustrated

§ 150. It should be carefully noted that the productiveness of either labour or capital, as measured by economic forces, depends not only upon the location of the margin of production and its own efficiency and supply, but also upon the efficiency and supply of the other factor. This may be made clear by means of an example. Let the reader imagine an island community which has an abundance of land of the best quality and therefore no occasion to pay rent, and from which monopoly is absent, so that the products of industry are divided by competition between wages and interest. Suppose that at the outset there are 1000 workers and $1,000,000 worth of capital embodied in those capital goods for which the community has most need. Assume further that the net product of a year's industry is worth $600,000 and that it is divided by the method just explained so that $500,000 or an average of $500 to a man is assigned as wages, and $100,000, or ten per cent., is assigned to capital goods as interest. These rates of wages and interest measure the productiveness of capital goods and workers as determined by comparisons at those points where they may be substituted for each other. Now suppose that instead of consuming its entire

income the community saves ten per cent. of it, that is, acts in such a way that ten per cent. of the net product of the year's business will take the form of new capital goods to be added to the continuously renewed original stock of capital goods, and only the remaining ninety per cent. of the product the form of consumers' goods. This, it must be noted, involves psychological changes in the people, but why these occur we need not here inquire. Let the population meantime merely renew itself so that there are still 1000 workers. The total capital for the second year's industry is now $1,060,000. The addition of the new capital will tend at once to lower the rate of interest. The free loanable fund is larger, and those controlling it as it arises, bankers, etc., will compete against each other to induce entrepreneurs to take it. As interest goes down wages, on the other hand, will tend to go up. To utilise the new capital to best advantage more workmen are needed, and entrepreneurs to whom the capital is entrusted will compete against each other in hiring workmen. These are temporary effects. To decide whether they will remain as permanent results after the new capital has been assimilated by the producing mechanism we must consider how the productiveness of units of capital and units of labour under the new conditions will compare with their productiveness before the change. The addition of $60,000 to the capital fund will cause a recasting of the whole capital-goods equipment of the society. The $1,000,000 worth of capital was already embodied in the most needed forms of tools, machines, etc. Since there are no new workers the new capital must be embodied in less needed forms to supplement the old forms that continue to be renewed, or else must be combined with the old capital released as old capital goods wear out to replace these old forms with new and more costly tools, machines, etc., that are more efficient, but not to the full extent of their increased prices. Incidentally some of the new capital goods will be used for purposes for which workmen were previously employed before they became relatively so scarce. The productiveness of capital goods in the marginal uses to which capital is put will, in the absence of improvements in methods of production, be lessened by these changes. The forms of capital goods which it now pays to use are less

needed. They add less to the product of industry and those who supply them must be content with less interest. But if interest falls at one point it must, for reasons already explained, fall over the entire industrial field before adjustment is complete. Hence we may conclude that the fall in the rate of interest noted as a temporary effect of the increase of capital will prove permanent.

An Increase of Capital Increases the Marginal Productiveness of Labour

But by so much as capital in the illustration has lost in relative importance, labour has gained. With their superior equipment workmen can produce at least as much more than before as corresponds to the productiveness of the new capital goods. Suppose that the fall in the rate of interest amounts to 1-2 per cent. Then the total deduction from the year's product on account of interest will be 9 1-2 per cent. of $1,060,000, or $100,700, of which 9 1-2 per cent. of $60,000, or $5700, will represent the addition to the product ascribable to the new capital. The total product of the year's industry will be the old product, $600,000, plus at least this new product, $5700, or $605,700. Since of this only $100,700 is now deducted for interest the remainder, or $505,000, will go to the 1000 workers as wages, or each will receive on the average $505 a year instead of the $500 previously earned. They are the same men working no harder than before, but the increased supply of capital has increased their relative importance and, therefore, the share of the product economically ascribable to the part they play in production. In such a community capital might conceivably be increased until every known kind of capital good capable of earning enough for its own replacement was added to the community's equipment and interest was lowered to nothing. Each addition to capital would increase the relative importance of labour and by the time interest was eliminated wages would have assumed princely proportions, although the workmen remained the same sort of men and continued to exert themselves no more than when their earnings averaged but $500 a year.

The Mutual Interdependence of Shares in Distribution

This assumed case is entirely hypothetical and the figures used are to be considered as illustrative rather than as mathematically exact, but the fundamental relation between wages and interest which it indicates is believed to be true of actual

industrial society. The introduction of rent and other complications will not alter this fundamental relation. The productiveness of labour will still depend not merely upon the richness of land and natural resources at the margin of cultivation and upon the number and efficiency of the workmen, but also upon the kinds of capital goods in use and the quantity of capital. A change in any one of these factors will alter the economic importance of every other and consequently the share of the joint product that is economically ascribable to it as its share. It follows that a complete explanation of the rate of wages or of the rate of interest must include a consideration of the causes which control the supply of workmen or the growth of population and the supply or increase of capital. Before adding this last link to the chain of explanation necessary to a complete theory of distribution, it will be desirable to review briefly the ground already covered and to meet certain objections. This is the task of the next chapter.

REFERENCES FOR COLLATERAL READING

*_Clark_, The Distribution of Wealth, Chaps. IX., X., and XVII.–XXIII.; *_Marshall_, Principles of Economics, Book VI., Chaps. VI.–VIII.; _Hadley_, Economics, Chap. IX.; _Pierson_, Principles of Economics, Part I., Chap. IV.

CHAPTER XV

VALUE, PRICE, AND DISTRIBUTION

Summary of Theory of Value

§ 151. We have now surveyed, in broad outline, the whole field of consumption, production, and distribution, and are prepared to discuss the ultimate determinants of economic relations. We have seen that men habitually value goods not as aggregates, but as divided up into distinguishable units, such as pounds or bushels, and that the values they ascribe to these units are in proportion to their marginal utilities. We have seen that in industrial society making valuations is a social process. It is not the marginal utility of each good to each consumer that determines its value, but the marginal utility of each good to consumers as a whole. Moreover, goods are valued as bundles of utilities by adding together the marginal utilities of their different qualities to the groups which are just able to command those qualities. Thus the rich accept in large measure the valuations which the poor place upon necessaries and comforts, and confine their influence to the valuation of luxuries. Socially speaking, however, the values of goods are determined by their marginal utilities.

Exchange Value and Price

From the point of view of consumption, value in use, the relation between goods and men, is all-important. In production and distribution its derivative, value in exchange, concretely represented by price, holds the forefront of interest. The exchange value of a good is its power to command other goods in exchange for itself. Price is exchange value in terms of the good used as a medium of exchange, or money. So long as money is invariable in its exchange value or purchasing power as regards goods generally, money prices are accurate measures of exchange values. Such invariability is assumed as a means to simplifying economic analysis in this as in previous chapters.

The determination of money prices was shown to result from

The Law of Price

bargaining and competition among buyers and sellers and it was found that laws of price might be formulated from the point of view of either. From the side of buyers the tendency is for price to correspond with the money equivalent of the marginal utility to the marginal buyer of the good purchased. It thus depends in part upon buyers' scales of wants and in part upon the sums of money which they have to spend. From the side of sellers the law of price depends upon the conditions of production. Under conditions of monopoly the tendency is for the monopolist to charge the price calculated in the long run to afford the largest monopoly profit. Under conditions of free competition, on the other hand, the price tends to correspond with the expenses of production to representative firms. The actual price is usually somewhat above or somewhat below this normal and allows for a competitive profit or loss to the entrepreneur.

Relation between Incomes of Consumers and the Expenses of Production

These laws of price leave unconnected two factors that are intimately related to each other—the sums of money which buyers have to spend and the profits and expenses of production which figure in the calculations of sellers. Generally speaking these are the same sums of money, for what buyers spend is their money incomes, and money incomes arise because of the part which those who receive them play in production. They are either profits, rents, wages, or interest. To bridge over this gap in the explanation of prices and in so doing to supply a complete theory of value and price is the task of the theory of distribution. It recognises that buyers and sellers, consumers and producers, are, in general, the same individuals and that the whole machinery of buying and selling is simply a convenient means of combining effectively the various factors in production and of assigning the appropriate shares of the product to those who have claims upon it.

The Influence of Monopoly upon the Shares of Income Secured in Competitive Industries

§ 152. The presence of monopoly in any branch of production makes possible the maintenance of prices above the expenses of production and the enjoyment of monopoly profit. It is important to perceive just what effect such a profit has upon the other shares in distribution. As already explained, the only way in which a monopolist can hold up prices is by curtailing the supply of the monopolised good he offers for sale.

Buyers will take a certain quantity of the good at the low price just covering its expense of production. If a higher price is asked they will take less. Monopoly price means therefore a smaller volume of sales than that which might be effected at cost and a corresponding curtailment of production. Curtailed production means in turn reduced employment of the factors of production, land, labour, and capital, in the branch of business affected, or a larger supply of these factors for competitive industries. If the rise of a monopoly is unaccompanied by any other changes, such as the decline of other monopolies, the opening up of new lands, or a reduction of population, its effect will be to crowd labour and capital into other branches of production where they find employment only through an enlargement of the volume of production. If the law of diminishing returns is in operation, this will mean a lowering of the margin of production and a lessening of the joint share upon the size of which the rates of wages and interest depend. Under such circumstances the rise of monopoly profits tends to increase rent and to reduce wages and interest. From the point of view of the whole community monopoly profit thus signifies an uneconomical distribution of the factors of production and a smaller product at the margin to be shared between labour and capital. This loss to labour and capital applies as well to wage-receivers and interest-receivers who boycott the products of monopoly as to those who buy those products and thus incur a further tax in the excessive price they have to pay for them. It must not be inferred from this analysis that the effects ascribed to monopoly are commonly experienced in modern progressive communities. Modern monopolies derive their profits less frequently by actually raising prices than by lowering their expenses of production and hence they tend not so much to reduce wages and interest as to prevent them from rising to the extent that they might if the economies of concentrated production and prices, determined by the expense of production, could be enjoyed together.

Graphic Representation of Production and Distribution

§ 153. In order to restate the laws determining rent, wages, and interest it will be necessary to advert for the last time to the relations that would prevail in an industrial society brought to the state of normal equilibrium. In such a society the re-

lation between production, distribution, and consumption would be extremely simple. Production would still be carried on as a serial process, but it could be readily analysed, since all prices would correspond exactly to the expenses of production and these would never vary. The whole matter may be represented graphically by the following figure:

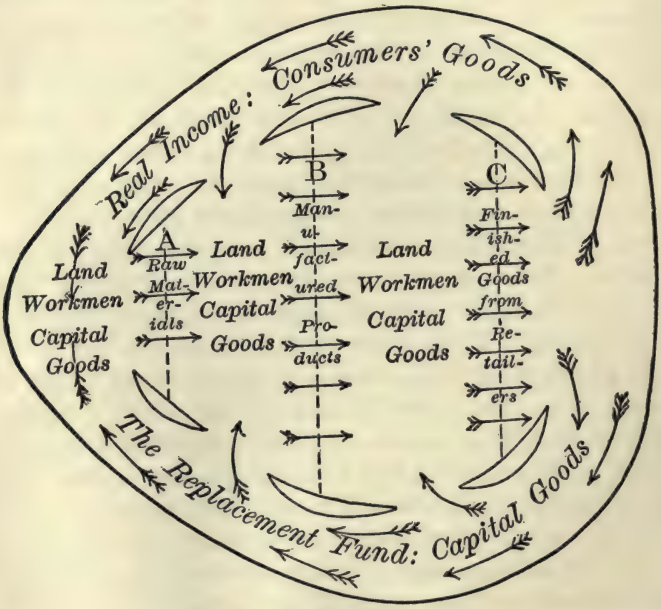


Fig. 9.

In the above figure production is represented as subdivided into three great stages, A, B, and C. The extractive industries (A) turn out raw materials. Manufacturing (B) takes these and transforms them into manufactured products. Transportation and trade (C) deliver the latter as finished products to purchasers, who may be either consumers converting their money incomes into real incomes, or entrepreneurs converting the free replacement fund into capital goods to restore the wastes incidental to production. The figure represents movement without change. Goods are flowing continuously from stage A to B and from stage B to C. At C the stream is divided, an unvarying volume of capital

goods flowing one way and an unvarying stream of consumers' goods flowing the other. The capital goods exactly replace the goods destroyed in the course of production and the consumers' goods exactly remunerate the owners of land, workmen, and owners of capital goods for the productive services which they or their possessions have rendered. Finally the prices of goods are invariable and everywhere just equal to their unvarying expenses of production.

Restatement of the Law of Rent

§ 154. How the expenses of production are determined was explained in the last three chapters. A brief restatement will suffice to recall the principal points. Rent is paid for the services which different pieces of land perform in production. On the one hand are the various uses to which human wants and prevailing methods of production cause pieces of land to be put. On the other are the quantities of land of different qualities and in different situations. The most suitable pieces of land are assigned to the most important uses. To them are added less suitable pieces down to a margin where a given piece is equally valuable for some other use. If assigned to the first use the given piece must command a rent equal to what it was worth for the other use, as shown by comparing it with other pieces actually devoted to that use. This rent is a "marginal rent" for all pieces of land assigned to the first and most important use. To it are added differentials measuring the superiority of pieces of land above this margin to determine their respective rents. The same process of comparison applied to pieces of land good enough only for inferior uses serves to determine their rents. At the very bottom of the scale are found pieces of land for which there are, economically speaking, no alternative uses. The "margin of indifference" for this lowest grade of land is the point where it does not matter economically whether the land is cultivated or allowed to lie waste. At this point pieces of land can command no rent. Economically speaking they are superabundant and, therefore, free. From this lowest no-rent margin of indifference the rents of all better or more favourably situated pieces of land are measured. Rent is the differential which indicates their position in the economic scale. From the point of view of price it is the share of the total price that is economically ascribable

to the land itself. If this share is large it indicates that the land serves an important industrial use and that land equally well adapted to this use is scarce.

Restatement of the Law of Wages

§ 155. Wages are paid to workmen for their services in production. Their determination results from calculations closely similar to those that are made in connection with rent, but the matter is more complicated because workmen are more adaptable to different uses than are pieces of land, and because the number of workmen of different grades is more fully subject to human control. Moreover, the margin of indifference for workmen is not that between the least important tasks to which workmen of the lowest grade are assigned and tasks of no economic importance, but between these tasks and less important ones that are ruled out economically by the scarcity of workmen even of the lowest grade. As in the case of pieces of land, so in the case of workmen, there are on the one side the various employments for workmen of different grades determined by the wants of consumers and the current methods of production, and on the other the number of workmen of each grade fitted for these employments. Wages are determined by comparisons just as are rents, only the basis from which all higher wages are measured is not no-wage, but low-wage workmen.

The Wages of Marginal Workmen

A complete theory of wages has to explain not only existing differences in rates of wages and the law by which marginal wages are fixed, but also why these differences persist. This we undertook to do by reference to the diverse standards of living found in each community and the influence of these standards in controlling the growth of population and determining the industrial qualifications of the members of each successive generation of the world's workers. Marginal wages were shown, on the other hand, to be determined by comparisons between the productiveness of workmen and of capital goods. At the margin of production where no rent is paid there is a product to be divided between labour and capital. The size of this product is the primary consideration upon which rates of wages and interest depend, and, as was shown, this is influenced largely by the location of the margin of production. If the number of the population is not so great compared with the natural resources of the country as to force a

resort to inferior lands, mines, etc., the no-rent margin will be located at a point where workmen and capital goods reap a large return. In the division between workmen and capital goods the location of the margin of indifference between them is the important consideration. This depends in part on the number and efficiency of the labouring population and in part upon the quantity and quality of the capital goods used in production. In general the law is that each factor obtains as its share of the price of the product an amount corresponding to what it has produced. Each factor, in other words, gets the equivalent of its own product measured not absolutely, but, in the only way that it can be measured, comparatively. Wages above the marginal rate also correspond to what the workmen who receive them have, economically speaking, produced. They indicate the place each worker holds in the scale of productiveness. In reference to wages as a whole, then, as in reference to rent, we conclude that the law is for each workman to get the share of the price of the product that he has himself contributed.

The Law of Interest

§ 156. Interest is what is paid to the owners of capital goods as remuneration for the services these goods render in production. The great mobility of capital, which results from the constant destruction and replacement of capital goods, causes the latter to be available for each use for which they are fitted in about the same proportionate quantity. In the assumed state of equilibrium the distribution of capital over the whole industrial field would be perfect. Capital goods would be supplied for each use down to the point where the interest they afforded just equalled the interest earned by other capital goods in other branches of production, and there would be one uniform rate of interest over the whole industrial field. This rate is determined in the same way as is the marginal rate of wages, by comparing the productiveness of capital goods with that of workmen. At the margin of indifference, where either may be used indifferently for given purposes, the balance is struck between them. The location of this margin depends, as already stated, upon the number and efficiency of the labouring population and the quantity and quality of the capital goods used, and also upon all of the influences that determine the

amount of the joint share which labour and capital divide between them at the margin of production.

The Calculation of the Replacement Fund

There are certain difficulties which suggest themselves in connection with this explanation of interest that must be cleared up at this point. They refer to the calculation of the replacement fund which each capital good is assumed to earn along with its interest. It will naturally be asked just how the amount of the total replacement fund is determined, and, secondly, how the proportion that must be assigned to this fund each year is fixed. The total amount of the replacement fund for each capital good equals, obviously, the price of the capital good. In the state of equilibrium assumed, this corresponds exactly to the expense of producing the capital good. This expense might be followed back in thought to the point at which the bare-handed savage appropriated from the storehouse of nature the material from which the first capital good was fashioned and the expense of production consisted wholly of wages, but it is equally logical to take for granted the conditions determining the prices of the capital goods used in the previous stages of production and make these the starting point for an analysis of present relations. The total replacement fund must then equal the price of the capital good to be replaced as determined by its expense of production.

The Life Period of a Capital Good Depends upon Rates of Wages and Interest

The amount to be set aside each year for the replacement of a capital good depends upon its durableness and the standard of efficiency which it must maintain in order to make its continued use profitable. Circulating capital goods must be completely replaced as they are used. Fixed goods wear out at varying rates and no general rule can be advanced in reference to them. The standard of efficiency required of capital goods depends in general upon the location of the margin of indifference between capital goods and workmen. If this is such that the rate of interest is relatively low while the rate of wages is relatively high, capital goods must be discarded promptly as their efficiency falls below a certain high standard, in order that loss may be avoided. This is because in most of their employments capital and labour work together, and it is uneconomical to equip highly paid workmen with worn and inefficient tools and machines when the use of new tools and machines may be had

on the payment of a low rate of interest. The lower the rate of interest, accordingly, or the higher the rate of wages, the shorter the period that capital goods will continue to be used and the larger the periodic allowance for their replacement which must be made out of their gross earnings. In the reverse case, that is when interest is high and wages are low, tools and machinery will continue to be used for a much longer interval and the accumulation of the replacement fund will be spread out over a correspondingly longer period. These considerations explain why cheap labour and old and inefficient capital goods are usually found together, while the almost certain attendant of dear labour is an up-to-date and efficient equipment of capital.

The Law of Interest Applies to Gross Earnings of Capital Goods

In distinguishing the earnings of capital goods into two elements, an interest fund and a replacement fund, we have merely followed the practice of the business community. The use of money as the universal medium of exchange causes loans to be made usually in money rather than in the capital goods which the borrower actually needs in his business and ultimately obtains by purchase with the money borrowed. The replacement in money of the principal borrowed causes interest to stand out clearly as a distinct item and accounts in large measure for the practice referred to. It would be an error, however, to conclude that the earnings of capital goods assigned to the replacement fund obey any different principle than those assigned to interest. Competition tends to make the earnings devoted to both uses correspond to the contributions which capital goods make to the price of the product and in the assumed society this correspondence would be perfect. The law of interest applies, therefore, as well to the gross as to the net earnings of capital goods, and it may be laid down as a general principle for capital goods, as for pieces of land and workmen, that they tend to receive as their shares of the price of the product amounts corresponding to what they contribute to production.

Restatement of the Law of Competitive Distribution

The general law of competitive distribution for a society allowed to attain the state of normal equilibrium is, then, that each factor in production has assigned to it a share in distribution corresponding to what it itself produces. If rent, wages,

and interest be defined as the prices paid respectively for the services to production of pieces of land, workmen, and capital goods, the law may be stated to be, that competition tends to put a price on the services of each of the factors of production corresponding to the price which attaches to its particular contribution to the product. In actual industrial society, as has already been pointed out, economic relations fall far short of this competitive ideal. Monopoly influences intervene to secure monopoly profits for some entrepreneurs at the expense of the shares assigned to wages and interest. Changes occur to throw the whole mechanism of production out of adjustment and to occasion profits or losses to other entrepreneurs which must in time be distributed among all participants. Special obstacles prevent certain groups, especially among the labouring population, from getting the full benefit of the influence of competition and make their earnings less than they ought economically to be. Full account must be taken of these and other influences when it is attempted to make practical application of economic theories, as in the later chapters of this book. Notwithstanding them, the law of competitive distribution which has been explained remains the norm to which actual relations tend always to adjust themselves. Its mastery is preliminary not only to a thorough understanding of prevailing conditions, but to any intelligent effort towards improving those conditions as they affect the mass of men. No apology need therefore be offered for the prolonged attention which the reader has been asked to give to a hypothetical society which, as is freely admitted, will never exist outside of the imagination of the economist.

The Same Law Generalised

§ 157. Up to this point in the analysis of competitive distribution constant reference has been made to the tendency of unrestricted competition to cause the prices at which goods are sold to correspond to the expense to representative firms of producing them. This expense of production has been analysed into its elements, rent, wages, and interest, and through this device these shares have themselves been explained. We are now ready to take a somewhat broader view of the relation between value and distribution and to recognise that what we have styled the expense of production is nothing more than the

sum of the values of the goods which co-operate in production and that the same general law of valuation runs through every stage of the process.

True Relation between the Expense of Production and Value

On the one hand are consumers with certain scales of wants to be satisfied and with certain sums of money to spend on their satisfaction. Their effective demand guides entrepreneurs in correlating the factors of production, on the other hand, so as to turn out as cheaply as possible those goods which can be sold at remunerative prices. The factors of production, land, labour, and capital, are available only in limited quantities. The value that is ascribed to the productive services of each piece of land, each workman, and each capital good depends upon the contribution it is able to make towards the production of those goods for which there is an effective demand on the part of consumers. Entrepreneurs correlate the various factors and through the substitutions and comparisons which they make in their efforts to hit upon that combination which is economically most efficient, they determine the division of the value ascribed to the joint products of the factors between the factors themselves. In the absence of monopoly and of changes which prevent competition from doing its perfect work, the whole value of the products of industry is divided up between rent, wages, and interest, and the money incomes assigned to those who receive these shares are exactly exchanged by them for the very net products in which they originate. The exact correspondence between value and the expense of production which is found in each branch of production under these conditions is not to be explained on the ground that the expense of production determines value. It would be more accurate, so far as our analysis has yet proceeded, to say that the value of the product itself determines the expense of production or the three shares into which such value is divided.

The Determination of Shares in Distribution a Complex Form of Valuation

Value originates in the wants of consumers. Only things which minister either directly or indirectly to the satisfaction of wants have value. But quite as important as ability to minister to the satisfaction of wants as a condition to value is limitation of supply. Goods that are superabundant are free. Only those whose available supplies fall short of the demand for them are valuable. The cause of limitation of supply is to

be found usually in the conditions of production. In the absence of monopoly each branch of production receives through the agency of competition its proportion of land, labour, and capital. The reason why the services of these factors must be paid for, or have value, ordinarily, is that they are limited in supply. Superior land is always so limited. In the United States land of inferior quality is still superabundant. Such land has in consequence no value and commands no rent. It gives rise to a no-rent margin from which the value of the productive services of superior pieces of land may be calculated. Skilled labour is limited as is superior land. In the United States, as in other countries, the supply of workmen even of the lowest grade is insufficient to meet the demand for the productive services which such workmen can perform. In consequence the services of such workmen are valuable and they can command wages. The supply of capital is also limited in comparison with the demand for it. This makes the services even of the least efficient capital goods valuable and enables their owners to obtain interest for their use. Thus at every stage value is the joint result of capacity to contribute to the satisfaction of human wants and limitation of the supply, and its explanation in the manifestations we have styled rent, wages, and interest is no different from its explanation in the case of simple consumable goods.

The Productivity Theory of Distribution

§ 158. The theory of competitive distribution that has been explained in this and the preceding chapters is commonly described as the "productivity theory" on the ground that it undertakes to account for the shares assigned to the different claimants by reference to the contributions which they have made to production. Although endorsed by many leading American and foreign economists, it is not universally accepted. Among rival theories, that which undoubtedly holds first place is the "exchange theory," ably presented as regards interest, or the share of wealth assigned to capital, by the Austrian economist, Professor Eugen von Böhm-Bawerk, in his two books, *Capital and Interest* and *The Positive Theory of Capital.* The objections which this distinguished writer urges against the productivity theory can best be indicated by a brief review of the exchange theory which he himself offers as a

substitute. If it can be shown that there is no real opposition between this and the productivity theory, the conclusions of both will be strengthened.

The Exchange Theory of Distribution

In his explanation of interest, Professor Böhm starts out with the entirely just contention that distribution is simply one segment in the completed circle of exchanges by which economic relations are controlled in an industrial society in which each produces not for himself, but for the market. He applies this thought to the interest problem, as follows: the entrepreneur by purchasing the appropriate kinds of capital goods and combining them with land and labour may, under normal conditions, realise a product whose price covers all of his expenses and leaves over an interest on the capital invested. Interest is thus the difference between the price of capital, or "future goods," and that of the products, or "present goods," into which they will ripen if managed with ordinary business prudence. It will be noted that his characterisation of interest is different in terms rather than in essence from that given in the text. Instead of saying, as we have done, that capital goods produce present goods worth more than themselves, that is, an interest over and above their own replacement fund, Professor Böhm asserts that the present value of capital goods is less than is normally the value of the goods into which they will be transformed by the process of production. In the former case the difference in value is ascribed without any attempt at analysis to the productiveness of capital goods; in the latter its explanation is sought in the idiosyncrasies of valuation.

Interest a Discount on Future Goods

Pursuing his inquiry, Professor Böhm concludes that the explanation of interest lies in the tendency of men to value present goods more highly than equivalent future goods and that the rate of interest is simply the rate at which men discount the latter in comparing them with the former.* This appears to be a very different proposition from that in the text that the rate of interest is the ratio between the value of the net products of capital goods and the value of those goods themselves, but if it can be shown that Professor Böhm's rate of discount depends, at last analysis, on the productiveness of

* This tendency was discussed in Section 36, Chapter IV.

capital goods the seeming opposition between the two views will be reconciled.

The Exchange Theory True from Viewpoint of Lenders

In the determination of the rate of interest, as in the determination of every other rate with which economics has to do, there are two parties to be considered, lenders or capitalists, who supply capital goods, and borrowers or entrepreneurs, who turn them to productive account. The exchange theory of interest views the phenomenon primarily from the viewpoint of lenders. Interest is a premium that is constantly offered by the present organisation of industrial society to those who will convert their incomes into future goods instead of present goods, or save and invest instead of spend. If men did not discount future goods, all incomes would be saved as long as interest could be earned in this way. That this does not happen is a sure indication of the truth of the principle upon which the exchange theory rests. It is equally obvious that whenever and as often as the current rate of interest exceeds the rate at which men discount future goods, income will be saved and invested and that the tendency in a competitive society will be for the supply of capital goods to be kept at just that level at which the rate of interest and the rate of discount are equal. From the side of lenders or capitalists, accordingly, the law of interest is that presented by the exchange theory.

The Sense in which Capital Goods are Productive

The productivity theory is based on a study of interest from the viewpoint of borrowers or entrepreneurs. They know from experience that capital goods are productive in the sense that under the direction of men of average prudence they may be made to afford interest. This, as explained in the chapters on production, is because roundabout, serial, or capitalistic production yields a larger return in goods in proportion to the land and labour used than direct production. Professor Böhm recognises this fact in common with other economists, but he objects to the hasty inference that because more goods are produced by the aid of capital the value of the aggregate product is necessarily larger. He points out that increasing the supply of any particular good tends to lessen its value and that it is even possible, by increasing the supply sufficiently, to remove a good from the domain of economic calculation altogether and

make it free. May not the larger supply of goods that results from capitalistic production be worth actually less than the smaller supply obtained by direct production, he asks, so that there is actually less than before to distribute instead of more, as the productivity theory assumes? The answer to this objection is that while multiplying any single product may reduce its exchange value so that the whole supply is worth less than before, such a consequence cannot conceivably follow a general multiplication of products such as is conceded to result from capitalistic production. Exchange value, as has been so often pointed out, is the ratio of exchange between goods. Multiplying good A or good B may change the ratio as regards either so that the increased supply is worth less, rather than more, than before, but multiplying all goods cannot possibly change the ratio so as to make the larger supply of goods worth less than was the smaller supply before. The inference that the aggregate price to be distributed will increase as the aggregate supply of goods increases, or that capital goods are productive in the sense that through their use a larger sum of value is created, appears therefore to be abundantly justified.

Exchange and Productivity Theories Complementary, not Contradictory

Armed with the knowledge that capital goods are productive, entrepreneurs try to apportion the supply of capital over the industrial field so that the largest return will be realised. The comparisons which this leads them to make between different capital goods and between capital goods and workmen have already been described, as has the tendency which results from these comparisons for the rate of interest to correspond to the product economically ascribable to units of capital as contrasted with units of labour. From the side of borrowers or entrepreneurs, therefore, the productivity theory of interest is as valid as is the exchange theory from the side of lenders or capitalists. There is no real opposition between them. Rather either to be complete must be supplemented by the other, as will appear when we come to the discussion of the last phase of the productivity theory, that is, the causes which control the supplies of workmen and of capital goods, and which by so doing determine the shares of the product assigned to them respectively, at the margin of indifference where they come into comparison.

The Wages-fund Theory

§ 159. Another theory in apparent conflict with that which has been defended in these pages is the so-called wages-fund theory, which at one time enjoyed great vogue in English economic literature. The theory can best be stated in the language of one of the leading works on political economy published about the middle of the last century, that of John Stuart Mill. It should be said that Mill himself abandoned the theory before his death, but without revising it out of his *Political Economy*. In his chapter, "Of Wages," Mill states that "wages, then, depend upon the demand and supply of labour; or, as it is often expressed, on the proportion between population and capital. . . There is unfortunately no mode of expressing by one familiar term the aggregate of what may be called the wages fund of a country; and as the wages of productive labour form nearly the whole of that fund, it is usual to overlook the smaller and less important part, and to say that wages depend on population and capital. . . With these limitations of the terms, wages not only depend upon the relative amount of capital and population, but cannot be affected by anything else. Wages (meaning, of course, the general rate) cannot rise but by an increase of the aggregate funds employed in hiring labourers, or in a diminution of the number of competitors for hire; nor fall, except either by a diminution of the funds devoted to paying labour, or by an increase in the number of labourers to be paid."

Conclusions Drawn from the Wages-fund Theory

In the guarded way in which the theory is here presented no particular objection can be raised to it, since it amounts merely to saying that wages are for the most part paid out of capital, that wages in the aggregate cannot exceed that part of capital assigned to wages or the wages fund, and that, consequently, the average rate of wages depends upon the proportion between the wages fund and the wage-earning population. That real wages are, literally speaking, withdrawn from the stocks or capital of retail dealers and in this sense "paid out of capital" was shown in Chapter IX., Section 89. That wages in the aggregate cannot exceed the aggregate fund of goods constituting wages is self-evident. Equally incontestable is the method proposed for calculating average wages. Unfortunately advocates of the wages-fund theory rarely contented

themselves with these conservative statements. They presented the theory as a law of wages and assumed a rigidity in the wages fund that would justify the most extreme conclusions. Thus many of them opposed strikes and other efforts on the part of particular groups of workmen to raise their wages on the ground that their higher wages, if they did secure them, would leave a smaller wages fund to be divided among other workmen and would therefore be entirely offset by lower wages for other groups. In the same way they tended to exaggerate the dependence of workmen upon capitalists and to represent the latter as the greatest benefactors of the race, since upon their self-restraint the size of the all-important wages fund depended. Any measures calculated to check ever so little the accumulation of capital were vigorously opposed on the ground that they menaced the welfare of the whole labouring population. These and other quite unwarranted conclusions have stamped the wages-fund theory as one of the most pernicious errors ever accredited by reputable economists.

Criticism of the Theory

As suggested, the great fault with the wages-fund theory as a law of wages is its assumption that the wages fund is rigid and predetermined. At the time that this idea was advanced by English economists there was but a limited importation of food and the other goods consumed by the labouring population of England. It followed that, after the crops were harvested, the amount of subsistence upon which the whole population would have to depend during the ensuing year was practically determined. By thinking of wages in terms of the staple article of diet of English workmen of the period, wheat, and ignoring the fact that the wheat supply must feed others as well as wage-earners, economists succeeded in persuading themselves of the existence of a rigid and predetermined wages fund. The assumption was not justified even when England imported no food from abroad, because, on the one hand, wages, then, as now, included a good deal more than food, and on the other it was not the subsistence of workmen, only, that was predetermined, but that of the whole population. The part of the total food supply which should go to wage-receivers was never fixed in advance. It might be increased or decreased at the expense of the parts assigned to other

classes. Hence it was quite unwarranted to argue even in reference to food that a strike could not improve the condition of one group of workmen except at the expense of some other.

Other Objections and Conclusion

But if the belief that the wages fund was rigid and predetermined was not defensible in England during the second quarter of the last century, it is still less defensible for commercial countries of the present day. At the present time the principal articles used for food are produced for the world market. No country is limited to its own products, and countries like the United States which produce not only most of their own food articles, but also for export, have a large reserve on which they may draw at will. Moreover, wages in the aggregate consist to a less extent than ever before of mere subsistence, and most of the articles other than food which workmen consume are produced continuously and admit of increase or decrease within considerable limits in response to the varying demands of the market. It follows that the wages fund under present conditions is as elastic as any of the funds with which economics has to deal, and no law of wages based upon it can throw much light on the causes which really determine wages. As was shown in Chapter IX., Section 96, even the fact that wages are for the most part paid out of capital loses its significance when it is remembered that the products of labour are themselves added to capital and that the tendency is for these products to exactly replace what is withdrawn and consumed and to keep the fund of capital intact. The true influence of the supply of capital upon the rate of wages is found not in the field of distribution, but in that of production. An increase of capital tends to raise wages because it enhances the importance of labour as a factor in production. Marginal workmen are enabled by such a change to produce more than they did before and this, at last analysis, is the reason why they earn more.

REFERENCES FOR COLLATERAL READING

**Böhm-Bawerk*, Capital and Interest, Book II., and The Positive Theory of Capital, Books V. and VI.; **Pierson*, Principles of Economics, Part I., Chap. IV.; *Mill*, Principles of Political Economy, Book II., Chap. XI.; **Taussig*, Wages and Capital, Part I., and Part II., Chap. XI.

CHAPTER XVI

VALUE, PRICE, AND DISTRIBUTION (*concluded*)

Ultimate Determinants of Distribution

§ 160. We come now to the last stage in the explanation of wages and interest, the discussion of the causes that control the growth of population and of capital, and by so doing influence the location of the margin of indifference between them. It will be well to preface this discussion by reciting some of the facts in reference to the actual increase, during the nineteenth century, in the populations of the leading countries of the world.

Statistics of Population

In Chapter II., Section 16, a table was given showing the growth of the population of the United States from 1790 to 1900. The remarkable rate of increase, varying from 36.4 per cent. in the decade from 1800 to 1810 to 20.7 per cent. from 1890 to 1900, is, of course, abnormal in the sense that it was due in part to immigration. During the same period the populations of European countries were also increasing, but at a much slower rate. Instead of doubling on the average once every twenty-five years as did the population of the United States from 1790 to 1890, the population of Europe but little more than doubled during the whole period.* The following table gives in round numbers the populations of the seven principal countries of Europe in 1801 and 1891 with the percentages of increase:†

Growth of Population in Europe, 1801–1891

	(000,000 *omitted*)		Increase
	1801	1891	Per Cent.
Russia in Europe,	40.0	93.7	134
Germany,	25.0	49.4	98
Austria-Hungary,	25.0	41.3	65
France,	26.8	38.2	43
United Kingdom,	16.3	37.9	133
Italy,	17.5	30.2	73
Spain,	6.0	17.2	187

*According to the French statistician, Professor Levasseur, the increase was from 175,000,000 in 1801 to 357,000,000 in 1891.

† From Levasseur, *La Population française*, III., Chap. VI.

Significance of these Statistics

The most interesting fact brought out by the above table is the varying rate at which the populations of the different countries grew during the period covered. This appears even more clearly from statistics showing the rates of growth since 1871. Thus from 1871 to 1891 the population of France was practically stationary, the population of Germany increased 21 per cent., and the population of England and Wales over 27 per cent.

The source of these variations in the rates at which the populations of different countries grow is to be sought, of course, in the relation between their birth and death rates and between immigration and emigration. For our present purpose we may confine attention to the former, since immigration has no direct effect upon the population of the world as a whole, however much it may affect that of particular countries.

Birth, Death, and Marriage Rates of Principal Countries

The following table gives the average birth, death, and marriage rates* of the principal countries of the world for which statistics are available for the years 1871-1890:

Birth, Death, and Marriage Rates, 1871–1890 †

	Births	Deaths	Excess of Births over Deaths	Marriages
Austria,	38.6	30.6	8.0	16.3
Germany,	38.1	26.0	12.1	16.4
Italy,	37.3	28.6	8.7	15.6
Holland,	35.2	22.6	12.6	15.1
United Kingdom,	32.6	19.9	12.7	14.4
Denmark,	31.7	19.0	12.7	15.2
Belgium,	31.0	21.4	9.6	14.2
Norway,	30.7	16.9	13.8	13.7
Sweden,	29.8	17.6	12.2	13.1
Switzerland,	29.4	22.1	7.3	14.7
France,	24.6	22.8	1.8	15.4

Comment on the Table

The above table emphasises again the great differences that are found in different countries. Austria, Germany, and Italy show the highest marriage and birth rates, but high death-rates in the first and last put them near the bottom of the list as re-

*That is, the number who are born, who die, and who are married for each 1000 of the population *per annum*.

†These statistics are taken from Mayo-Smith, *Statistics and Sociology*, Book I., Chaps. V., VI., and VII.

gards the rates at which their populations are growing. The countries with the lowest birth rates, France, Switzerland, and Sweden, have very diverse marriage and death rates. France combines with the highest marriage-rate the lowest birth-rate, while in Sweden the relation is just reversed, the lowest marriage-rate resulting in the highest birth-rate. Even more remarkable is the difference in the rates at which the populations of these two countries are growing. The low birth-rate of France is accompanied by an average death-rate which prevents the population from increasing as much as 0.2 per cent. a year. In Sweden on the other hand the higher birth-rate is associated with a very low death-rate which causes the country to stand near the top of the list as regards the rate at which its population is growing. Such are the facts in reference to the growth of population in the principal countries of the world. We may now turn to the theories of population that have been advanced by economists in their efforts to show that these facts obey definite social laws.

The Malthusian Doctrine of Population

§ 161. The first clearly formulated theory in regard to the growth of population was that advanced by the Rev. T. R. Malthus in his *Essay on the Principle of Population as it Affects the Future Improvement of Society,* published in 1798. Malthus's argument was mathematical in form, but so simple as to be easily followed. He advanced as too obvious to require demonstration the propositions: (1) "that food is necessary to the existence of man," and (2) "that the passion between the sexes is necessary and will remain nearly in its present state." From these he proceeded on the basis partly of reasoning and partly of observation to the conclusion that while food tends to increase only by addition or in arithmetical ratio, population tends to increase by multiplication or in geometrical ratio. The significance of this contrast he makes clear in the following sentences: "Taking the population of the world at any number, a thousand millions, for instance, the human species would increase every twenty-five years in the ratio of 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, etc., and subsistence as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, etc. In two centuries and a quarter the population would be to the means of subsistence as 512 to 10; in three centuries as 4096 to 13; and

in two thousand years the difference would be almost incalculable, though the produce in that time would have increased to an immense extent." "The power of population is," he concludes, "indefinitely greater than the power in the earth to produce subsistence for man." Population, consequently, tends ever to press ahead of the means of subsistence, and is only restrained from so doing because without subsistence men must perish. In order to keep population within the limits fixed by a slowly increasing food supply, nature imposes checks which Malthus thought, at first, might be characterised either as "vice" or "misery." The lower animals, he saw, obey the instinct to propagate without thought of the consequences, with the result that their numbers are kept down by "want of room or nourishment" or by their "becoming the prey of others." Man is more prudent and may deliberately restrain his impulse to beget and multiply his kind. "This restraint," Malthus declared, "almost necessarily, though not absolutely so, produces vice." But even with its vicious attendants, this last restraint is all too weak, he thought, to keep population within the necessary bounds. Through an excess of births the food supply is rendered insufficient, and misery accompanying death through starvation and disease appears as another necessary check for man as for the lower animals. Malthus's general conclusion was that vice and misery result inevitably from the lack of harmony between man's impulse to beget and multiply and nature's power to produce food, and he justified these evils as the divinely selected means for quickening intelligence and soul in men who might otherwise have no stimulus to improvement.

Influence of the Doctrine on Economic Thought

More mature deliberation, stimulated no doubt by the bitter attacks which the publication of his opinions excited, induced Malthus to modify his argument in the second edition of his Essay (1803). He here recognises that voluntary restraint not only need not, but often does not necessitate vice, and that it may alone prove an adequate check on population. By this qualification the Malthusian theory was changed from a pessimistic denial of the perfectibility of man to a reasoned appeal to men to substitute "moral restraint" as a check on population for the vice and misery which Malthus still deemed the

chief means of holding the balance between it and the food supply. Notwithstanding these admissions, Malthus himself and many of the leading English economists who followed him, such as Ricardo and John Stuart Mill, continued to think of population as tending constantly to get ahead of the food supply.

Criticism of the Doctrine

The most fundamental criticism to be urged against Malthus's reasoning is that he contrasts a purely hypothetical man with an equally hypothetical nature. Speculating as to the rate at which population would increase if unchecked is idle when, as a matter of fact, men are never unchecked in their begetting and rearing of children. Even the lowest savage appreciates the tremendous consequences of the sexual function and is to some extent restrained by this knowledge. In the same way prophecies in regard to the utmost possible increase in the earth's output of food can furnish no solid basis for scientific reasoning, because man never has and probably never will tax nature to her utmost. With all its suggestiveness, therefore, Malthus's method of approaching the question predisposed him to arrive at erroneous conclusions. He avoided these in large measure in the second and later editions of his Essay, but only by giving such a different turn to his argument as to deprive it of much of its original significance.

Premisses in Reasoning about Population

§ 162. Economists are still divided in their opinions in regard to the relative importance of the different influences that control the growth of population. In general they may be separated into three groups, according to whether they emphasise the physiological, the social, or the economic factors which enter into the problem. Upon two points all are in substantial agreement: (1) Illegitimate births constitute such a small proportion of all births in modern communities that no serious error is involved in assuming that a more or less formal union precedes the begetting of children. (2) The age of the wife at marriage has great influence on the number of children to a family, the general rule being that the older the wife the fewer the children. These two propositions may be accepted as premisses in all reasoning in reference to the population question.

The Physiological Check

The economists who make prominent physiological considerations in their discussions of population try to establish the general law that the reproductive capacity of animals stands in a definite relation to the complexity of their nervous organisations. The more highly evolved the organism, the smaller, it is contended, is the number of the offspring. Even if this theory be true in its application to different orders of animals, including man, it remains open to question whether the subtle changes which are still going on in man's nervous organisation can be shown to influence appreciably his reproductive capacity. Reasoning from analogy that because men beget fewer offspring than lower orders of animals, highly developed men and women must be less fruitful than those who are less developed is suggestive, but not conclusive. On the other hand, statistics of population have not yet been perfected to a point that makes a test of the theory in the light of the facts of experience possible. If the theory prove to be well-founded it may help to set at rest the fears of modern Malthusians who continue to dread the curse of over-population. It must still be regarded, however, as an interesting hypothesis rather than as an established principle.

The Influence of Social Customs

That the growth of population is controlled by social customs and standards was recognised quite clearly by Malthus himself. Among primitive peoples customs like that of exposing female children at their birth have a direct influence on the growth of population and may serve as substitutes for all other checks. Marriage customs also have the greatest influence. Other things being equal, polygamous marriages are favourable to a rapid growth of population. This was clearly recognised by the founder of the Mormon Church and was a prominent motive for the inclusion of polygamy in that religion, notwithstanding the clear prohibition of the practice in the Book of Mormon itself. The extension of the practice of monogamy tends to restrain the growth of population and has not been without influence in preserving European countries from the periods of famine that are still not unusual in the Far East. Other customs, such as that requiring that the husband shall be able to provide a house for his wife, or that the wife shall have made with her own hands an elaborate trousseau before

marriage, serve to postpone the period of marriage and indirectly to check the growth of population. As the customs and usages of different peoples are all moulded to one common standard through international intercourse, the special restraints on population which once acted in particular localities will lose their force. Public opinion still controls in large measure the conduct of individuals in their marriage relations, but its prescriptions are based to an ever increasing extent on economic considerations, and this brings us to the third factor controlling population.

The Economic Check

§ 163. The most obvious and certain economic check upon population is that emphasised by all writers since the subject began to attract attention, namely the need common to all men for food, clothing, and shelter as conditions to continued existence. Population is checked by starvation, disease, and death as soon as the number of the people reduces the earnings of the lowest grade of wage-earners below what is needed to maintain and rear an average family. This "positive check" is unfortunately of more than historical interest. Every country has its "submerged tenth" of unfortunates who suffer habitually from under-nutrition and resulting disease and death. As already stated the members of this class are constantly changing. Those who neither die, nor win their way back to the classes from which they descended, are forced in time to apply for institutional relief and to enter the still lower class of avowed social dependents. It follows that the normal tendency of the class is towards self-extinction. It is perpetuated, if not actually added to, in countries like the United States, by the steady stream of recruits that descends to it from the higher industrial classes.

The Influence of the Standard of Living

Actual starvation confronts more rarely those belonging to the class of manual workers (Class 4 in the classification suggested in Chapter XIII., Section 138), but for them also under-nutrition is a possibility which prolonged illness or inability to obtain employment may at any time change into a reality. The narrow margin which their usual earnings provide above the bare necessaries of life, coupled with their lack of thrift and prudence, makes them especially liable, when some temporary calamity reduces their incomes, to sink permanently below the

line of self-support and self-respect. At the same time, for this class as a whole it is not disease and death, but sacrifices induced by the desire to maintain the "standard of living," that act as the principal check upon the growth of population. As this check acts in about the same way, although not in the same degree, on all classes above the very lowest, its influence may be discussed in general terms.

A Stationary Population

§ 164. The population of a country like the United States is divided up into hundreds of different classes, each distinguished by special industrial qualities and having a different earning capacity from the others. The general law applying to the earnings of all classes is that an increase in the number of persons competing for any particular grade of work tends to lower the wages paid for that kind of work. The tendency may be counteracted by an increased demand for the grade of work concerned, or by similar increases in the supplies of workmen and of capital goods all along the line unaccompanied by any lowering of the margin of cultivation, but in the absence of these changes it is always to be reckoned with. As explained in Chapter XIII., Section 138, different classes are more or less clearly marked off from each other and it is a usual thing for children to fit themselves for the grade of work done by their parents. In a stationary society the number of workmen in each grade would need to be kept constant if a change in wages was to be avoided. Children in each grade would need, on the average, to just replace those withdrawn by death, or the birth-rate for each grade would need to just equal the death-rate, if there was to be no reduction in the standard of comfort. Although few modern societies are stationary, it will be useful to note just what this condition of affairs involves as regards the habits of a population before passing to a discussion of the limitations which are active in a progressive society.

Conditions Necessary to a Low Birth-rate

The standard of living has been defined as the "mode of activity and scale of comfort which a person has come to regard as indispensable to his happiness, and to secure and retain which he is willing to make any reasonable sacrifice." From the point of view of the growth of population the sacrifice which the maintenance of the standard of living may entail is

the postponement of marriage. In the assumed situation this sacrifice would have to be incurred to the extent necessary to prevent population from increasing at all. Consider how this might be accomplished for any given class in the population. As children attain maturity and begin to seek for employment they will find the number of desirable positions limited and the competition for them severe. This discovery will affect different ones quite differently. Some in every class will accept the best positions they can get, adjust themselves to the limited incomes these positions afford, and marry early without much regard to consequences. They are likely to have larger families than they can easily provide for and may be so discouraged in the struggle that they will fail to maintain their standards of living or to give their children as good starts in life as they themselves enjoyed. Or, instead of being discouraged by the difficulties they encounter, they may only be inspired to put forth greater efforts. Marriage is the spur to lagging ambition which many young men require, and instead of preventing them from attaining the best and highest of which they are capable it proves often the very means of helping them to such attainment. Such men raise their standards of living rather than lower them as their responsibilities multiply, and conceive plans for their children that they would have been incapable of formulating for themselves. Besides those who marry early, there are others with greater prudence who refuse to assume the responsibilities of married life until they are well established. By the time such men feel able to marry their inclination to do so may have passed, or if they do marry, their families are likely to be small. Allowing for men and women who do not marry at all, for childless marriages, and for infant mortality, which is high in even the most advanced communities, we may conclude that the prudence and forethought of only a part of the members of each class will keep a population stationary, even though a large number are quite reckless in their marriage relations.* Great prudence on the part of some will serve to offset great recklessness on the part of others.

* The population of France is practically stationary, although three children to a family is the average in that country.

Causal Relation between the Standard of Living and Wages in the United States

In a progressive society like the United States the conditions differ from those just described only to the extent that progress permits an increase in population without any lowering of the standards of living. If the rate of progress is rapid enough standards may be maintained and even advanced at the same time that population is growing as rapidly as early marriages and large families permit. Under such circumstances the power of resistance which the standard of living offers is not brought into play at all, and it is more accurate to speak of wages as determining the rising standard than of the standard as determining the rising wages. Few countries are so favourably situated as this. Even in the United States, especially as regards the higher industrial classes, population has been held in check by the standard of living. In periods of great prosperity the tendency is for earnings to increase and for standards to rise. The causal relation is from wages to the standard. In times of depression the higher standard is maintained and serves to prevent the fall in wages that would inevitably follow if marriages continued to be as numerous as they were before. The causal relation is now from the standard to wages.

Population should Grow at the Top, not at the Bottom

Economists have been too much inclined to ignore the psychological results of marriage in their discussions of the population question. In a progressive community, the fact to be deprecated is not so much a rapidly growing population, as a population which is increasing more rapidly at the bottom than at the top. Early marriages and large families for manual workers who are incapable of achieving or even aspiring to any higher standard of living than that of their class are socially harmful. What is needed by this class is a wider ambition, coupled with the prudence necessary to the attainment of the objects which it suggests. The higher economic classes, on the other hand, suffer not from lack of prudence, but from a lack of sane and wholesome desires. Their standards of living are largely artificial and for them early marriages and large families are more likely than not to prove a benefit by stimulating and giving a wiser direction to ambition. Even should the result be a lowering of the earnings of the class to which such individuals belong, the consequence, socially considered, may not be disad-

vantageous, if it does not at the same time lower the earnings of lower classes. An equalisation of earnings through a multiplication of professional and skilled workmen and a reduction of manual workers would be highly desirable.

The Influence of Immigration and Emigration

A complicating circumstance that makes it difficult, if not impossible, to form any conclusion in reference to the power of resistance which the standard of living of the manual labouring class opposes to falling wages, is emigration and immigration. For example, Germany's population continues to increase at about the same rate decade after decade, and the surplus is disposed of by emigration without any lowering of the earnings of the workmen who remain in the Fatherland. It can only be guessed whether population would be checked by the standard of living, so that earnings could be maintained, should some circumstance close to German emigrants the countries to which they are now welcomed. In a reverse way immigration prevents any gauging of the power of resistance of the standard of living of America's manual labouring class. The steady stream of immigrants with lower standards from Europe is a demoralising influence, but the latter have thus far been assimilated without any serious decline in earnings. If immigration were to cease and a long period of depression were to threaten a reduction in the wages of the labouring population, it is quite problematical whether the standard of living would serve to check marriages and births to the extent that would be necessary to prevent such a reduction.

The Growth of Population Controlled by Standards of Living

In the opinion of most contemporary economists the standard of living is an effective means of control over the growth of population, and the tendency among progressive countries generally is for standards to rise and to insure to the rank and file of the population ever larger command over the material conditions necessary to happy homes and happy lives. This opinion must be accepted, if at all, by reference to general considerations and to the undoubted fact that the real earnings of the manual labouring class are larger than at any previous stage in the world's history. The primary cause of their improvement has been the improved methods of production that have been referred to frequently in these pages.

Rising standards of living have doubtless been a secondary cause, since it is highly probable that but for them population would have kept pace with the new methods and prevented the earning capacity of the bare-handed workman from increasing. Before attempting a summary statement in reference to the influences controlling the growth of population and through it wages, it will be well to consider how the growth of capital or wealth is controlled.

The Growth of Capital

§ 165. As in discussing the growth of population, so in discussing the growth of capital, we will begin with a brief study of the facts and consider subsequently theories touching the causes controlling capital accumulation. Unfortunately statistics of capital, as distinct from statistics of wealth of all kinds, are rarely available, so the economist is forced to content himself with rough estimates. In all progressive countries capital appears to be growing at a more rapid rate than population. The following estimates referring to the United Kingdom and the United States throw some light on the rate of accumulation.

The Growth of Wealth in the United Kingdom

According to the elaborate calculations of Sir Robert Giffen, explained in his work on *The Growth of Capital,* the wealth and population of the United Kingdom increased as follows from 1845 to 1885:

	Population (Millions)	Wealth (Million £)	Wealth Per Capita. (£)
1845	28	4,000	143
1865	30	6,000	200
1875	33	8,500	260
1885	37	10,000	270

The increase in wealth from 1865 to 1875 was thus 40 per cent. and from 1875 to 1885, 17.4 per cent. The lower rate of increase between the latter years is accounted for in part, if not wholly, by the decline in prices during that period.

In the United States

The statistics of wealth included in the United States census reports are believed to be quite untrustworthy as regards the gross totals returned, but may be cited as a basis for a comparison of particular items. The following schedule gives the estimated total wealth of the country for the year 1890:

Wealth of the United States in 1890
($1,000,000,000)

Real estate with improvements,	39.5
Live stock on farms, farm implements and machinery,	2.7
Mines and quarries, including products on hand,	1.3
Gold and silver coin and bullion,	1.2
Machinery of mills, and products on hand,	3.1
Railroads and equipment,	8.7
Telegraphs, telephones, shipping canals and equipment,	0.7
Miscellaneous,	7.9
Total,	65.1

As the population of the country in that year was some 62,600,000, the estimated *per capita* wealth was something over $1000 or somewhat less than the estimated *per capita* wealth of the United Kingdom in 1885.

Growth of Agricultural and Manufacturing Capital

The growth of wealth is indicated in a very rough way by the following statistics showing the increase, for each decade since 1850, of the value of all farm property in the country and of the capital invested in manufactures. The last item is quite untrustworthy except for the last two census years:

	Value of All Farm Property ($1,000,000,000)	Increase Per Cent.	Capital Invested in Manufactures ($1,000,000,000)	Increase Per Cent.
1850	4.0		0.5	
1860	8.0	100	1.0	100
1870	8.9	11	2.1	110
1880	12.2	37	2.8	33
1890	16.1	32	6.5	132
1900	20.4	26	9.8	51

From these figures it may be inferred that the wealth of the country increased from 1890 to 1900 by an increment somewhere between 26 per cent., the estimated increase in agriculture, and 51 per cent., the estimated increase in manufacturing. As population increased during the decade less than 21 per cent., the statement that capital grew more rapidly than population appears abundantly justified.

Necessary Cautions

In interpreting these and other statistics of wealth and capital great caution is necessary. Where such statistics have been collected by the inventory method, as is attempted in the United

States, important items are sure to be omitted while other items are sure to be duplicated. On the other hand, where such figures are calculated from returns as to incomes from different sources, as were Sir Robert Giffen's figures, errors may arise either from inaccuracies in the incomes reported or from mistakes in the method by which the amount of capital giving rise to incomes is inferred from the amount of incomes. Another difficulty arises when it is attempted to infer statistics in reference to capital from statistics of general wealth. The normal effect of an increase in capital is a decline in the rate of interest, but this serves itself to increase the value of lands, monopolies, and other sources of funded incomes. It follows that as capital increases and the rate of interest falls, the apparent increase in wealth is likely to be much greater than the actual increase in economic goods. Still another source of error is in changes in the prices of goods, but enough has been said to indicate that statistics of wealth and capital must be interpreted with greater caution than any other statistics with which economics deals. We have now to consider theories as to the causes which control the accumulation of capital or the growth of wealth.

Present Preferred above Future Goods

§ 166. Since capital goods owe their existence primarily to a willingness on the part of men to postpone consumption or to save, the increase of such goods is affected by everything which influences this willingness. What, then, are the inducements to saving and what the opposing motives for spending? The latter have already been considered in Chapter IV., Section 36. As was there shown, it is the tendency of men to overestimate the importance of the present in comparing it with the future, and this leads them normally to prefer present command over consumable goods to future command over goods of like kind and quantity, present satisfactions to similar satisfactions at some future date.

Reasons for this Preference

Four reasons may be assigned for the above tendency: First and most obvious is the fact that provision for present necessities is the indispensable condition to the continuance of life. The shipwrecked mariner who has provided himself with subsistence for one week has no choice between consuming it this week or next month. His present need for food *must* be satis-

fied and *must* loom larger in his consciousness than his need at some future time. This fact prevents men from saving that portion of their incomes needed for present necessities. Secondly, the future is uncertain. No man knows, when making provision for the future, that he will live to enjoy it. This was summed up in pagan philosophy in the phrase, " eat, drink, and be merry, for to-morrow we die." The Christian religion also emphasises the uncertainty of life in that it directs men to take no thought for the morrow, but to devote their days to pious works and the preparation of the spirit for the immortal life to come. Either course is obviously unfavourable to the accumulation of capital. A third reason is found in man's deficiency in imagination. Present wants are actually felt, those of the future are only imagined. The consequence for the average man is an underestimate of the importance of future satisfactions which makes him unwilling to forego present pleasures on their account. Finally, a fourth reason is man's lack of resolution or will. Many who have the most vivid imaginations are, nevertheless, proverbially improvident. This is because they have not the strength of character to resist the temptations of the present and provide in advance for the needs of the future which they so clearly foresee.

These reasons combined predispose the average man to spend. The proportion of his income that he will spend depends in a measure on the amount of that income. If it is small, most, if not all, must go for present necessities. The poverty of the poor is an almost insurmountable obstacle to their ever becoming rich. Those who are more fortunately situated compare in their minds present comforts and provision in advance for future necessities, or present luxuries with future comforts. With an ample income even the most improvident person is likely to make some provision for the future. More prudent people are likely to save something though their incomes be small.

The Motives to Saving

The strongest counter-motive to spending is the desire to provide for one's self and one's family after old age has come and earning power has been reduced or has failed altogether. This is important because it applies to nearly everyone. Its practical consequences are reflected in the vast sums

which are paid each year in progressive countries as premiums to life insurance companies.* Some of these payments secure for the family a fixed sum upon the death of the insured. A more common form of policy at present, however, is one which calls for payment of the principal after a certain number of years, even though death has not occurred. This reflects clearly the general appreciation of the fact that old age means usually diminished earning power. Next in importance to the desire to provide for old age as a motive to saving is ambition to command social esteem, power, and influence. That "wealth is power" of a certain kind is a fact universally appreciated. Those who covet power at the present day are very apt to seek it through the avenue of wealth accumulation. Though less general than the first motive, this is doubtless the dominant consideration to those men who acquire the largest fortunes. A third motive to saving is the interest which may be obtained for the use of capital, which is itself traceable to the superior efficiency of capitalistic production. Economists have tended to exaggerate this motive in declaring that "interest is the reward of saving." It is certainly not true that interest is the only reward or even the chief reward of saving, or that the greater part of the saving which now occurs would cease if the interest now paid for the use of capital were to be withdrawn. Interest is the reward of saving, however, in the sense that all those who save under present industrial conditions may, and as a rule do, receive interest as one of their compensations. Furthermore, to some of those who save interest is *the* reward that is chiefly considered, and the rate of interest has a determining influence on the amount of income they are willing to save. A fourth motive to the accumulation of capital is ambition for business success. Many of the men who succeed best in business in the United States seem devoid of other ambition. They have become absorbed in the game of making money and persist in it because it interests them more than anything else, though they have no very clear idea to what use they will put their fortunes after they are acquired. To such men business success is the all-important ob-

* The annual incomes of such companies in the United States, derived chiefly from premiums, exceed $500,000,000.

ject, and capital is accumulated simply because it is a necessary step towards the attainment of the goal.

Progress Strengthens these Motives

Comparing the four motives inducing men to spend with those inducing them to save, we may conclude without argument that progress tends to strengthen the latter and to weaken the former. The pressure of current needs, the uncertainty of life, lack of imagination, and weakness of will are all becoming less prominent influences shaping the conduct of the average man. On the other hand, desire to provide for the family, social ambition, willingness to postpone consumption for the sake of interest, and ambition for business success seem on the increase. These changes are responsible for the tendency already described for capital goods to multiply more rapidly than population, for the operation of the law of diminishing returns as regards capital as a whole, and for the declining rate of interest so marked in the United States during the last forty years. Some writers go so far as to prophesy that this multiplication of capital goods will continue until the industrial world has all of the capital it can utilise and the rate of interest on safe investments has been lowered to nothing. This possibility is considered in the concluding chapter on Economic Progress.

The Ultimate Determinants of Distribution

§ 167. In the explanation of distribution that has been given, great importance has been ascribed to the productiveness of labour and capital in marginal industries, and it has been stated that the location of the margin of production depends upon the extent of the land and natural resources of a country in proportion to its population and capital. We have just considered the various influences that control the growth of population and of capital, and we are now in a position to indicate the ultimate determinants of distribution.

In the isolated life of a Crusoe economic conduct requires an exact balancing of the marginal satisfactions or utilities derived from consumption and the marginal sacrifices or disutilities involved in production. Work should be carried to that point at which pleasure ceases to compensate for sacrifices and at that point it should stop. In industrial society economic relations are vastly more complex. Marginal utilities are calculated, not by each individual separately, but

by groups of individuals. Marginal disutilities include not merely effort, but also postponed consumption. They also are calculated, not by each individual separately, but by groups of individuals, some of whom contribute the efforts necesary to production and others the waiting necessary to the existence of the capital goods indispensable to efficient production. In explaining distribution we started with the valuations which consumers place upon goods and analysed the causes which control the division of the values so determined between the factors which co-operate in production. But consumers are as a rule themselves producers. Like Crusoe, though in a less simple and direct way, they compare the utilities of the goods they consume with the disutilities connected with the part they play in production. This is not true of consumers, whose wealth comes to them because they control sources of funded income, since such persons make no present sacrifices as a condition to securing command over purchasing power. Nor is it true of consumers who receive interest for capital they have accumulated, not in order that they may secure interest, but in deference to one of the other motives that have been described. Such consumers also make no present sacrifice in return for the purchasing power they receive. Nor is it true of workmen who find their work a pleasure and whose hours are fixed not by calculations of marginal disutility which they themselves make, but by standards determined by the weaker members of the industrial groups to which they belong.* It is true, however, of capitalists who are just induced by the promise of the current rate of interest to save and invest in preference to spending. Such men balance the marginal utilities of the goods which the interest will enable them to command against the marginal disutility of deferring consumption. It is also true of the marginal workmen in each group who determine by their calculations the length of the working day for their class. For them the marginal disutility of the final hour's labour is a painful reality which they balance in their minds against the

* For example, many a mechanic who limits his work to eight hours a day, would gladly work an additional hour for proportionate pay, but is prevented from so doing by loyalty to the rule of his union.

added goods which the pay for this last hour enables them to command. If the balance is on the negative side they are ripe for a strike for a shorter working day, and if their feelings are the feelings of their group they are likely to secure it.

The Balancing of Utilities against Disutilities

Besides the calculations which determine the accumulation of capital and the length of the normal working day, there are others which fix standards of living and through them control, perhaps, the rate at which the working population increases. To maintain wages men in different industrial groups incur the sacrifices involved in a postponement of marriage, and in the long run these sacrifices are compensated, and only just compensated, so far as the standard of living controls wages, by the higher earnings which such conduct insures to the class benefited.

A full analysis of the motives that enter into the balancing of utilities and disutilities in industrial society, and of the equilibrium that results from them, belongs to a more advanced treatise on economics. Such a balancing is one of the conditions to the realisation of the hypothetical state of normal equilibrium to which reference has so frequently been made in previous chapters. In actual progressive societies changes occur so frequently that the exact balancing of utilities against disutilities is something constantly aimed at, but never secured. In men's efforts to realise it, the ultimate determinants of values and distribution are, nevertheless, to be sought.

REFERENCES FOR COLLATERAL READING

**Mayo-Smith*, Statistics and Sociology, Book I., Chaps. V., VI., and VII., and * Statistics and Economics, Book I., Chap. V.; *Giffen*, The Growth of Capital; **Clark*, The Distribution of Wealth, Chap. XXIV.; **Marshall*, Principles of Economics, Book IV., Chaps. IV. and VII., Book VI., Chap. XI.; *Nicholson*, Principles of Political Economy, Book I., Chaps. XI. and XII.; *Böhm-Bawerk*, The Ultimate Standard of Value (article in *Annals of American Academy of Political and Social Science*, Vol. V. pp. 149–208)

CHAPTER XVII

MONEY AND THE MONETARY SYSTEM OF THE UNITED STATES

The Disadvantages of Barter

§ 168. As has already been pointed out,* every extension of co-operation and the division of labour, beyond the simple division of tasks possible within the family, must be accompanied by a corresponding development of the system of exchange. The simplest kind of exchange is barter; but this has serious drawbacks, since it can take place only when two traders come together, each having in his possession a commodity preferred by the other. Even this unusual situation will not lead to an exchange unless the parties can agree as to the terms of the bargain. Thus, under the system of barter, the American Indian with a pony to dispose of had to wait until he met another Indian who wanted a pony and at the same time was able and willing to give for it a blanket or other commodity that he himself desired. Even when pony and blanket came together an exchange through barter might be prevented by the fact that one of the owners thought his commodity worth somewhat more than that of the other. Neither pony nor blanket could be divided, and in consequence higgling over the trade would be quite as likely to lead to a quarrel as to a transfer of property.

The Nature and Functions of Money

The inconveniences connected with barter led, at an early period in the history of civilisation, to the introduction of a medium of exchange, or money. Although no exact account of the steps preceding this important innovation has been preserved, it is not difficult to reconstruct in imagination the circumstances which determined the choice of the medium of exchange and caused it gradually to come into general use. Inability to barter surplus products for the exact commodities desired must have suggested the feasibility of bartering them

* Section 77, Chapter VIII.

for other products that were in more general demand, more durable, or for some other reason *more exchangeable* than the former. Thus the owner of surplus game who was unable to get for it the arrow-heads he desired, would be glad to accept instead some durable ornament generally prized in the community, such as a string of beads. His chance of exchanging the latter for arrow-heads would be excellent, and would certainly be preferred to the prospect of having his game spoil on his hands. In some such way commodities would come to be distinguished even in primitive communities by reference to their exchangeability, and the most exchangeable commodity would gradually come into use as a medium of exchange.

Money a Standard of Value

Quite as important as a medium of exchange to the development of an industrial community is a standard, or common denominator, by means of which the values of commodities may be compared. Without such a standard the value ratio between each commodity and every other commodity must be remembered by the trader. For example, if he deals in ten commodities there will be forty-five ratios of exchange to be remembered, and these will increase by multiplication to 1225 if he deals in as many as fifty commodities. The use of a standard of value enables the trader to substitute for the forty-five possible exchange ratios in the first case, the nine ratios between the value of the selected commodity and the values of the others, and in the second case for the 1225 possible exchange ratios, 49 ratios. The smaller number of ratios under the new system tell exactly the same story as the larger number did before. Thus, instead of remembering that a string of beads is worth four deer, that two deer are worth an arrow-head, and that two arrow-heads are worth a string of beads, it suffices for the trader to remember that a deer is worth one-quarter, and an arrow-head one-half of a string of beads. To serve as a standard or common denominator of value is a second function of money, and to fulfil it, as to fulfil the first, the commodity selected for the purpose must possess in high degree the quality of exchangeability.

Also of Deferred Payments

In addition to serving as a medium of exchange and a standard for comparing exchange values, money, or the monetary unit, serves in modern industrial communities as the medium

for credit transactions or deferred payments. Promises to pay in the future for value received in the present are habitually expressed in terms of money. To serve as a standard for deferred payments is thus money's third function.

Prices and the Value of Money Vary Inversely

§ 169. Price, as already explained, is exchange value measured in terms of money. In the United States and other gold-standard countries prices express the value ratios between the commodities priced and gold. To say that a bushel of wheat is worth $1 is to say that a bushel of wheat will exchange for 23.22 grains of pure gold, since the latter is the standard dollar of the country. If the price of wheat should rise to $1.25 (*i. e.*, to 29.02½ grains of pure gold), the value of gold measured in terms of wheat will have fallen correspondingly. One dollar, or 23.22 grains of gold, will now exchange for only four-fifths of a bushel of wheat. Thus every change in price registers a corresponding change in the exchange value of gold measured in terms of the commodity priced. To determine with certainty whether any given change is due to a change in the value of the commodity, or in the value of gold, the standard money, it is necessary to make a general comparison in which all important commodities are included for the two periods. If in the given case it should be found that while the price of wheat rose other prices remained constant or fell, it might fairly be concluded that the value of gold had not fallen and that the change was due to a rise in the value of wheat.

Stability of Value a Desirable Attribute of Money

Some writers describe money as the measure of values, but it is evident that it is not a measure to be compared with a foot-rule or a bushel. It is a convenient standard for comparing values or a common denominator to which all values may be reduced; but as a measure of values in any absolute sense it is untrustworthy, since it is itself variable in value. This variability is a source of annoyance and loss to the business community, and hence, as explained in the next section, stability of value is one of the qualities essential to a good money.

Various Commodities Used as Money in the Past

§ 170. Present-day monetary systems are the result of an historical evolution. In the past, in different countries, nearly every kind of commodity has served as money. The ox is the standard of value referred to in the earliest literature of Greece and Rome. In Africa cubes of salt have been used. Tea

was used at one time in parts of Asia. In America the Indians used strings of beads, which they called wampum, and for a time wampum was also used for small payments between the colonists in New England. In Virginia tobacco long served as the standard of value, and efforts were made to fix by law the value ratio between it and the coins which found their way to the colony from Europe. As a result of experiment, all civilised countries have now come to the use of the metals as money, and all of the more important commercial countries have fixed upon gold as their standard and relegated other metals to a subordinate position in their monetary systems. The reasons for the preference for gold become clear from a consideration of the qualities which should be possessed by a good money.

Qualities Needed in a Good Money

Economists quite generally agree that the commodity selected to serve as money should have the following qualities: (1) value, (2) durability, (3) portability, (4) homogeneity, (5) divisibility, (6) cognisability, and (7) stability of value. That the commodity which is to serve as the intermediary between valuable things must itself have value is obvious. Durability is important because after each exchange transaction the medium of exchange must remain for a longer or shorter time in the possession of the seller. Unless it is durable, it will depreciate during this interval to the seller's loss. This consideration precludes the use of perishable articles as money and accounts for the world's preference for the precious metals, which are as durable, when alloyed with copper, as anything known to man. Portability is indispensable to the convenience of a medium of exchange. Other things being equal, the commodity which compresses the greatest value in the smallest bulk is the most economical medium of exchange for large transactions. In this respect gold is superior to silver and this accounts in part for the preference for it of leading commercial nations. Homogeneity and divisibility are related qualities, since together they insure that the commodity used as money may be divided and subdivided without loss in value. These qualities also distinguish the metals. Cognisability is important as it renders difficult the circulation of counterfeit money. One objection to silver is the resemblance to it of the baser

metals lead and tin. The last quality, stability of value, is essential in connection with the function which the monetary unit performs as a standard of deferred payments. In the absence of such stability creditors and debtors have no guarantee that the contract between them calling for the payment of a certain sum of money at a future date will involve the return of a value equivalent to that loaned. If the value of money rises in the interval the debtor will be injured, if it falls the creditor will receive less than he anticipated. Either event must discourage transactions involving such an uncertain element, and it is for this reason that the importance of stability of value in the commodity which is to serve as money can hardly be exaggerated. As regards this quality also the precious metals have a marked superiority over most other things. The demand for them is very elastic because they serve such a variety of different purposes. They are highly prized as ornaments, they are used in watch-cases, family plate, etc., as badges of social position; they serve important industrial uses in connection with dentistry, etc., and finally they are now so widely used as money that the monetary demand for them is large. On the side of supply the conditions are equally favourable to stability of value. Because they are precious and at the same time durable, the greater part of the total quantity produced, at least in modern times, has been preserved and is still available to satisfy current needs. In proportion to the total stock (estimated in the case of gold at $10,000,000,000) the addition to the supply due to production each year is insignificant. The supply is thus practically constant over short periods and is little affected by variations in the annual output of the world's mines. Elasticity of demand and constancy of supply, the conditions favourable to stability of value, are thus presented by the precious metals as by no other commodities. As regards these characteristics there is, perhaps, little to choose between gold and silver. The world's preference for the former must be explained chiefly by its higher value in proportion to its bulk and its readier cognisability.

§ 171. The choice of the medium of exchange and standard of value was a subject which early engaged the attention of organised governments. They did not create the monetary

systems that are found to-day, but they gave them a legal sanction which has added materially to their efficiency. Laws at present control the monetary systems of civilised countries in two vital respects: they declare what forms of money shall be a legal tender, that is, shall be accepted in legal payment of all obligations calling for money, either between individuals or between the state itself and its subjects, and they determine the conditions under which these forms of money and other media of exchange that serve the convenience of the business community shall be manufactured and put into circulation.

The Rôle which the State Plays in Connection with Money

The manufacture of metallic money is called coinage and has become a government monopoly in all advanced countries, for the simple reason that this has been found by experience to be the only means by which a perfectly reliable coinage system can be maintained. At first coining consisted merely in stamping the head of the sovereign and an indication of the weight of the coin on one of the faces of a flat disc of metal. So long as this only was done, it was necessary at every transaction to weigh the pieces of money offered in exchange to make sure that they had not been "clipped" since leaving the mint. This necessity was obviated by the second step in the progress of coinage, which was to stamp the reverse face of the disc of metal. A third step consisted in "milling" the edges of the coin and thereby rendering it impossible to clip it without detection. At the same time that these improvements in the process of coinage were made, stringent regulations were passed forbidding the clipping and "sweating" of coins, and requiring those having in their possession coins whose weight had been reduced below a certain standard to return them to the mint, so that they might be remelted and reissued at full weight. Withdrawing the character of legal money from "light" coins has proved a simple and effective method of enforcing the latter provision. In addition to coins, most modern governments issue one or more forms of paper money. Although devised originally as a means of securing revenue for hard-pressed sovereigns, such money, on account of its convenience, has won for itself a permanent place among the media of exchange preferred by intelligent business communities.

Coinage and the Printing of Paper Money

Printing and engraving paper notes have thus become as important a function of government as minting coins, and quite as great progress has been made in manufacturing notes that are at once durable and so cognisable as to defy the ingenuity of counterfeiters.

Standard, Token, and Credit Money

In the monetary systems of most modern states three different kinds of money may be distinguished, *i. e.*, standard, token, and credit money. Standard money is that to the value of which the values of all other kinds of money in circulation are adjusted. It may be self-regulating, as when the law declares that a certain weight of the metal selected for the standard shall constitute the standard coin and permits all persons bringing such metal to the government mints to have it converted into coin either gratuitously or on the payment of a small fee, called seigniorage. This system is designated "free coinage," and has been adopted by all the more important commercial nations. Alternative to it is the system of "fiat" money, that is, money issued on the authority of the government and made to circulate by being declared a legal tender. Such money is usually accepted at the outset with some misgivings, but after a time people become accustomed to it, and if the amount issued is controlled so that there are no violent changes in the value of the monetary unit, it may serve nearly as well for ordinary transactions as self-regulating money.

Token money is money which is issued for use as small change in connection with minor transactions. It is usually made of a baser metal than the standard and put out in just the quantity that suits the convenience of the business community. Credit money supplements standard, and is issued on the credit of the government. It is redeemable in standard coin on demand, and differs from token money in that it is designed to serve as a medium of exchange for large as well as small transactions. As business communities learn to appreciate the superior convenience of paper money, the field for credit money steadily widens. In the United States a stage has already been reached where credit and token money constitute, with credit substitutes for money such as checks and drafts, practically the entire medium of exchange of the country.

§ 172. From early times governments have struggled to keep

different kinds of money in concurrent circulation. The ill success of such efforts led in the sixteenth century to the formulation by Sir Thomas Gresham, one of the advisers of Elizabeth, of the principle known as Gresham's Law. This is to the effect that when two or more kinds of money circulate concurrently, that kind the material of which is most enhanced in value by being given monetary form tends to drive out of circulation those kinds the materials of which have been less enhanced or unchanged in value by being given monetary form, that is, cheaper tends to drive dearer money out of circulation. This seems very like asserting that poor money tends to drive out good and needs careful explanation. Gresham's Law

An illustration will help to make clear the reasons back of Gresham's Law. In 1792 the Congress of the United States passed a coinage law adopting the bimetallic system. Both gold and silver dollars were made full legal tender, and the Secretary of the Treasury was instructed to coin both metals freely for all applicants, and to put fifteen times as much silver into the standard silver dollar as he put of gold into the standard gold dollar. This is conveniently expressed by saying that the law provided for a mint ratio of 15 to 1. Some time after this act went into effect the market or commercial ratio between silver and gold became 15½ to 1, *i. e.*, in the bullion markets of the world 15½ ounces of silver exchanged for one ounce of gold. The situation then was that our mint coined bullion into money, making fifteen ounces of silver the equivalent of an ounce of gold, while in the world's market an ounce of gold was equivalent to 15½ ounces of silver. Silver coin was made by law just as good money as gold within the limits of the United States, and was therefore the cheaper medium for the payment of debts within the country. According to Gresham's Law it should have driven gold out of circulation, and this it did, in fact, as soon as the situation was understood. Since an ounce of gold would buy fifteen and a half ounces of silver abroad, while the American mint would give to fifteen ounces of silver the same monetary power that an ounce of gold enjoyed, it was profitable to export gold coin, exchange it for silver bullion, import the latter, and have it converted into the overvalued silver money. For this reason such gold as was coined was An Illustration

withdrawn from circulation, and the country was brought to the cheaper silver standard.

Gresham's Law and the Present Monetary System of the United States

The above demonstration of Gresham's Law may seem to prove too much. If silver drove out gold after 1792, why, it may be asked, does it not now drive out gold, and why does not paper money drive out both gold and silver? The reason is not far to seek. Gresham's Law describes a tendency. After 1792 that tendency was quickened into active life because the free coinage of silver opposed no obstacle to the substitution of the cheaper for the dearer money, so long as any of the latter remained in circulation. To-day the tendency is dormant because the quantity of silver and paper money put into circulation is rigidly limited, and is far from sufficient to meet the monetary needs of the country. This cheaper money, at the time it was first issued, did drive out gold; but obviously it could not drive out more dollars than it could itself replace. The limitation on its supply permits some gold to remain in circulation. Gresham's law still operates, however, as every bullion broker knows, when gold is to be exported, for at such times great pains are taken to select only full-weight coins for shipment. Any circumstance which should increase the volume of silver or paper money in circulation or reduce the country's need for money, would serve to increase the exportation of gold coins, and, if persistent, might cause light as well as full-weight coins to be withdrawn until no gold was left in circulation.

The Adoption of the Gold Standard in Europe

§ 173. In adopting the bimetallic system in 1792 the United States simply fell in with the general practice of European nations. That system has since been given up, as the result of the conviction impressed upon one country after another that gold and silver cannot be kept in concurrent circulation at any arbitrarily established mint ratio. England was one of the first countries to arrive at this conclusion, having adopted the single gold standard in 1816. On the continent the struggle to maintain a double standard was continued until the third quarter of the last century. Finding it difficult to keep both gold and silver in circulation at a parity without the co-operation of other nations, France and some of the other states of Southern Europe established in 1865 the so-called Latin Union, which had this for one of its principal objects. From 1803 to 1873,

France and the Latin Union succeeded in keeping both gold and silver in circulation at their established mint ratio of 1 to 15½. During the entire period the market ratio between the two metals varied * but slightly from this mint ratio. In 1873 several circumstances united to compel France to abandon the policy which she had so long upheld. Chief among these was the increased production of silver, due to silver discoveries in America, which lowered the value of that metal and caused its substitution on a large scale for the country's dearer gold coin. Seeing their gold disappearing from circulation and fearing that they would be brought to the cheaper standard, the countries of the Latin Union decided in 1874 to limit the coinage of silver, and in 1878 to close their mints altogether to the free coinage of that metal. By this action they maintained their dearer standard, which was thenceforth gold. About the same time (1871-73), Germany adopted the single gold standard by limiting the coinage of silver so that the silver money in circulation should never exceed ten marks *per capita*. Holland, Norway, Sweden, and Denmark were not slow to follow the example of their southern neighbours. More tardily Austria-Hungary (1892-1902) and Russia (1896), which for several years had had depreciated paper currencies as their chief media of exchange, accumulated sufficient gold to establish securely the gold standard. Thus at the end of the nineteenth century all of the important nations of Europe except Spain had the gold standard in actual operation.

Its Adoption Outside of Europe

Outside of Europe a similar development was in progress during the same period. The British dependencies, Canada, Cape Colony, and the States of Australasia have long been on the gold basis. India suspended the free coinage of silver in 1893, and by 1899 had accumulated enough gold in London to maintain the silver coin, which continued to be the principal medium of exchange of the country, at a fixed parity with the gold coinage of England (15 rupees = £1). Gold thus became the country's real standard of value. Japan adopted the single gold standard in 1898. At the close of the nineteenth cen-

* The extreme variations were from a ratio of 1 to 16¼ in 1813 to a ratio of 1 to 15.19 in 1859. *Cf.* Shaw, *The History of Currency, 1252 to 1894*, p. 159.

tury only China and Mexico, among the important nations of the world, remained on the silver basis, and at the time of writing (July, 1903) even these countries are taking measures to establish a fixed parity between their silver currencies and gold in some such manner as did India in 1899. When these measures become effective gold will be the standard of value of the entire commercial world.

Monetary History of the United States

§ 174. As already explained, the first coinage law of the United States gave the country a mint ratio so unfavourable to gold that silver became in time its actual standard of value and medium of exchange. It was not until 1834 that Congress attempted to change this situation. In order to bring gold back into circulation, acts were passed in that year and in 1837 establishing the present mint ratio between gold and silver, which is 1 to 15.988.* The standard silver dollar was to contain 371.25 grains of pure silver as under the act of 1792, and the standard gold dollar 23.22 grains of pure gold. Both were to be 9-10 fine. This new ratio undervalued silver nearly, if not quite, as much as the former had overvalued it, since the commercial ratio between gold and silver continued to be about 1 to 15½. In obedience to Gresham's Law, silver now disappeared from circulation and gold became the real standard of value of the country. This situation continued down to the time of the Civil War. During that struggle United States notes or greenbacks were issued in excessive quantity, with the result that gold also disappeared from circulation and the country was brought to a paper standard. Thus when the war closed, and for some years thereafter, neither gold nor silver, except the subsidiary coin used for small change, was in circulation. In 1873, after considering the subject during successive sessions, Congress passed a law omitting the standard silver dollar from the list of authorised coins. At the time this action attracted little attention, but a few years later, when the question of resuming specie payments was under consideration and silver producers were suffering from the decline in the gold price of their product, there arose a violent agitation for the remonetisation of silver. In 1878 Congress passed what is known as the "Bland-Allison Act," which reintroduced the silver dollar

* The "16 to 1" of recent campaign arguments.

and required the Secretary of the Treasury to purchase monthly from $2,000,000 to $4,000,000 worth of silver bullion and coin it into standard dollars. The gold price of silver continued to fall, and this led in 1890 to the enactment of a second law, known as the " Sherman Act," which required the Secretary of the Treasury to purchase monthly 4,500,000 ounces of fine silver so long as the market ratio between silver and gold should be less favourable to silver than the mint ratio, and to pay for it by the issue of so-called Treasury notes redeemable in coin and possessing full legal-tender power.

The Gold Standard Law

As a result of the Bland-Allison and Sherman Acts, 554,000,000 silver dollars were coined in the United States from 1878 to July 1, 1903. Of these, less than 75,000,000 have ever been in circulation because of the awkwardness of the silver dollar as a medium of exchange. The remaining dollars have been represented by silver certificates, redeemable in silver dollars on demand. The consequence of this large increase in the silver currency of the country was to cause gold to be withdrawn from circulation. This tendency became so marked after the passage of the Sherman Act that serious fears were entertained lest the gold standard, which had been re-established January 1, 1879, should be displaced by a cheaper standard. In March, 1893, a special session of Congress was called by President Cleveland for the sole purpose of repealing the purchase clause of the Sherman Act, which was finally done in October of that year. After much further agitation, the logical sequence to this policy followed on March 14, 1900, when Congress passed a law definitely affirming that gold is the standard of value of the country.

Present Monetary System of the United States

§ 175. On July 1, 1903, there were in general circulation in the United States eight different kinds of money. The amounts of each kind in circulation and in the Treasury, as shown by the statement of the Secretary of the Treasury for that date, were in round numbers as follows: Gold coin and bars, $1,253,000,000; (gold certificates, $379,000,000); standard silver dollars, $554,000,000; (silver certificates, $455,000,000); subsidiary coin, $102,000,000; Treasury notes, $19,000,000; United States notes, $347,000,000; national bank notes, $414,000,000. The gold and silver certificates are placed in parentheses

because they stand for gold and silver included in the first and third items. The total money supply of the country was, therefore, $2,688,000,000, of which $312,000,000 was held in the United States Treasury as assets of the Government. This represented an estimated circulation *per capita* of $29.39.

Gold Coin Kept at a Constant Parity in Value with Gold in Coin

As already stated, it is the monetary policy of the United States to maintain an exact parity between the value of its gold coin and the value of the gold in such coin and between the value of gold money and the seven other varieties of money enumerated. How this is effected will now be explained. The value of gold coin is prevented from exceeding the value of the gold in such coin by the policy of free and gratuitous gold coinage. Anyone who has gold in any form may take it to the mint and have it converted into coin free of charge. He need not even wait for the process of coinage to be completed, as the Treasury issues gold certificates for bullion left on deposit. In fact, the policy of the Government towards owners of gold bullion in any form is so liberal that practically the entire product of the gold mines of the country is now sent to the Government assay offices or Government mints to be converted into commercial bars or standard coins. This free convertibility of bullion into coin prevents gold coin from ever becoming more valuable than its gold contents. Any tendency in this direction is promptly checked by a multiplication of coins and a reduction of the gold supply in other forms.

Gold coin is prevented from becoming less valuable than the gold it contains by the simple fact that it may be diverted with little loss to any other use for which gold is adapted. It is always potential bullion, and is treated as actual bullion to be thrown into the melting pot, exported, or dealt with in any other way that seems desirable whenever its bullion value exceeds ever so slightly its coin value. Free and gratuitous coinage on the one hand and the ever-ready melting pot on the other, are thus the influences which maintain the constant parity between the value of gold coin and the value of its gold contents.

§ 176. The maintenance of the parity between gold and the other varieties of money is a more complicated matter. Gold certificates are kept at par by the fact that they are redeemable

How the Parity between Gold and Silver Coin is Maintained

at the pleasure of the holder in the gold coin in exchange for which they are issued, and which is held in the Treasury as a trust fund. Standard silver dollars, which, like gold coin, possess full legal-tender power, are kept at a parity with gold because they, too, are freely exchangeable at the United States Treasury for gold or any other form of money that is desired. There is no law expressly requiring their redemption in gold, but laws have over and over again affirmed it to be the settled policy of the United States to maintain a parity between its gold and silver coins, and prompt redemption of one in the other has long been recognised as the only sure way of maintaining such parity. The ability of the Secretary of the Treasury to pay out gold in exchange for silver depends, of course, upon the limitation of the amount of the latter that is put into circulation. As the law now stands, no more new silver dollars may be coined than will suffice to redeem the $19,000,000 in Treasury notes still outstanding, and there is little doubt that the quantity thus authorised, circulating for the most part as silver certificates, will be continuously needed for the country's retail trade. So long as this limitation is adhered to, the redemption of silver dollars is not likely to cause the Government any embarrassment. Minor coins are kept at a parity with gold because they also are redeemable in standard coin, and because there is a constant demand for the limited quantity of such coins issued.

History of United States Notes

The United States notes and the Treasury notes of 1890, although so different in their origin, are now on the same footing so far as their monetary use is concerned. Both are a legal tender and both are now redeemable in gold. The United States notes or greenbacks, which were issued in excess during the Civil War, were restored to a parity with gold by the resumption of specie payments, January 1, 1879. The amount of this currency, which was at one time nearly $450,000,000, had been reduced to $346,681,016 by May 31, 1878, when an act, which is still in force, requiring this quantity to be kept in circulation, became effective.

The Gold Reserve

After 1890, when the excessive issue of silver currency threatened to deplete the country of its gold, the United States notes were the convenient means used by bankers to secure

that metal from the Treasury. As, at the same period, the Government's revenues were insufficient to meet its current requirements, the Secretary of the Treasury was compelled to pay out the notes almost as fast as they were redeemed, and this permitted their repeated use for the same purpose. The act of March 14, 1900, was designed to prevent the recurrence of a similar situation. It provides for a special gold reserve of $150,000,000 to be set aside by the Secretary of the Treasury for the exclusive purpose of redeeming on demand United States notes and Treasury notes. The redeemed notes are to be used only to maintain the gold reserve either through exchanges for free gold already in the Treasury or through the purchase of gold bullion "at such rates and upon such terms as may be deemed most advantageous to the public interest." The law provides further that when the gold reserve falls below $100,000,000 the Secretary of the Treasury shall restore it to $150,000,000 by borrowing money at 3 per cent. or less on the credit of the United States. The redemption of these two forms of money in gold is thus assured so long as the credit of the United States Government is not itself impaired.

National Bank Notes

The national bank notes, the last variety of money to be considered, are kept at a parity with gold by being made redeemable in legal money either at the Treasury or over the counter of the issuing bank.

Stability of the Gold Standard

As a result of these various expedients, all of which reduce to the ready convertibility of the token or credit money concerned into gold coin, all kinds of money in circulation in the United States are kept at a parity, and the gold standard is maintained. So long as the issue of token and credit money is restricted within its present limits there seems little ground for anxiety in regard to the stability of the standard.

The Limping Standard

§ 177. The monetary system of the United States has been styled the "limping standard" because it includes with standard, token, and credit money, silver dollars, which are full legal tender, although they are not by express law redeemable in standard gold coin, as are the Treasury notes and greenbacks. At the present time there are in round numbers 500,000,000 of these silver dollars for which the country has no use in its medium of exchange. These seem to serve a monetary use

through the silver certificates which circulate in their stead, but, as a matter of fact, the latter owe their currency not to the silver dollars which they represent and which nobody wants, but to their convenience for use in retail trade and to the general belief that rather than have them depreciate, the Government will redeem them in gold in the same way that it redeems its other forms of paper money. The silver dollars themselves are a dead asset piled up in the vaults of the Treasury at Washington, as useless to the Government and to the country as would be a similar accumulation of aluminum or copper. What to do with these silver dollars is a problem which threatens to embarrass the Government more and more as the country becomes more firmly attached to the gold standard.

The Silver Hoard

At the price (53 cents an ounce) which prevailed July 1, 1903, the 500,000,000 odd silver dollars which constitute the Government's hoard were worth, as bullion, about $200,000,000. It can hardly be doubted that the stability of the country's monetary system would be increased if this amount in gold could be substituted for these surplus silver dollars and the $500,000,000 odd of silver certificates in circulation could be converted into an out-and-out credit currency like the United States notes. A gold reserve of $350,000,000 would then be available to maintain a credit currency equal to about $850,000,000.

Objections to Sale of Silver Dollars

But there are two objections to this course. The "friends of silver," who must still be reckoned with as a political factor of no mean importance, would oppose bitterly any attempt to dispose of the nation's silver as bullion on the ground that this would still further depress the price of that metal at the same time that it tended to enhance the value of gold. When it is recalled that the world's annual output of silver is only about 175,000,000 ounces, the demoralising consequences that would follow the sudden offer for sale of nearly 387,000,000 ounces will be appreciated. Clearly, any such policy must be carried out gradually if the Government is to realise any considerable return from its sales of silver bullion. The other objection is urged by extreme advocates of the gold standard, who deprecate the use of any money other than standard coin or certificates based upon a dollar for dollar reserve of such coin, beyond the token money required for small change. Such writers

have long urged the retirement of the United States notes already in circulation and would look upon the suggested addition to these notes, even though coupled with a proportionate strengthening of the gold reserve, as an imprudent innovation. To do justice to this latter objection it will be necessary to consider the whole question of the proper place of token and credit money in a well-ordered monetary system.

The Function of Token Money

§ 178. The function of token money in connection with the gold standard is readily understood. Owing to their small size in proportion to their value, gold coins are not suitable for small change. The experience of the United States has demonstrated that even the gold dollar is too small to be a convenient coin and its coinage was suspended in 1890, leaving the quarter eagle ($2.50) as the smallest gold coin in circulation. The experience of other countries has led to similar conclusions. Thus the smallest gold coin of Great Britain is the half-sovereign ($2.50), of Germany, the five-mark piece ($1.25), and of France, the five-franc piece ($1.00). Token money is resorted to to supply gold-standard countries with convenient coins of the small denominations required in retail trade. The experience of each country must determine what token coins best suit the convenience of its business public, but there are certain principles that may be laid down which are of general application: (1) The issue of token money should be limited to the actual requirements of retail trade, and to insure this result and the maintenance of the parity between token and standard money, the law should provide for the ready convertibility of one into the other. (2) Since the value of token money depends upon the demand for it and upon its ready convertibility, the value of the bullion contents of such money is of slight importance in comparison with its being readily cognisable and convenient in size and weight. In fact, the only good reason for having the face value of token coins bear a certain relation to the value of the bullion they contain, plus the expense of their manufacture, is that this is the easiest way to prevent counterfeiting. A serious objection to the silver dollars of the United States regarded as token money is that their silver contents are now worth so little in comparison with their coin value that a handsome profit might be made by manufacturing silver dollars

of standard weight and fineness and in every respect as good as those manufactured by the United States. This offers entirely too attractive a field for the ingenuity and daring of counterfeiters. (3) On the other hand, the margin between the bullion and coin value of token coins should be wide enough to allow for considerable variations in the former. Only in this way is it possible to avoid the danger that the bullion value of such coins shall come to exceed their coin value, with the result that they will be withdrawn from circulation.

Token Money of the United States

The token-money system of the United States, except as regards the excessive coinage of silver dollars, conforms fairly well to the above principles. The minor silver coins issued are the half-dollar, the quarter, and the dime. These are a legal tender in payments of ten dollars or less and, as already explained, are redeemable in standard money at the pleasure of the holder. The other coins issued are the nickel five-cent piece and the copper cent, which are a legal tender in payments of twenty-five cents or less, and likewise redeemable in amounts of twenty dollars or multiples thereof. The most striking difference between this system and those of European countries is the relatively high value of the coin of lowest denomination which it includes. The smallest coin of Great Britain is the farthing (½ cent), of Germany, the pfennig (¼ cent), and of France, the centime (1/5 cent). Except for this possible defect, the American system appears to meet all the requirements of the country's retail trade.

The Function of Credit Money

§ 179. Credit money, in distinction from the small change that we have called token money (which is, of course, small-change credit money), is justified not on the ground that it adds to the convenience of the medium of exchange, but that it is economical. Thus the United States notes in the monetary system of the United States are no more convenient than gold certificates, and their retirement through the substitution for them of gold and gold-secured certificates would not impair in the least the efficiency of the country's medium of exchange. The objection to such a policy is that it would entail useless expense upon the Government and would tie up many millions of the world's gold for a purpose which credit money serves as well. The latter, when issued in the form of paper notes, is as accept-

able to the business community as any other form of money, so long as its ready convertibility into standard coin is assured. This convertibility can be maintained by means of a gold reserve equal to only one-half, one-third, or even, in the opinion of some writers, one-fourth of the credit money in circulation. Such a small reserve is adequate to the purpose because, in practice, gold itself is a very awkward medium of exchange. It is required only as a means of making payments abroad, for use as bullion, or as a special reserve by private credit institutions, and these combined uses call ordinarily for but a small amount of gold coin in comparison with the total monetary needs of a country. When gold is required credit money may be presented to the Government for redemption. If this credit money is withheld from circulation until it can be exchanged again for gold, to be added to the gold reserve, and if the public treasury is empowered, as is the Treasury of the United States, to borrow money (*i. e.*, gold) on the public credit to replenish the gold reserve whenever it is reduced below a certain point, there seems every reason to believe that the convertibility of a moderate amount of credit money, say, one-half of the money in general circulation, could be maintained in the face of any emergency. It is equally clear that such a system, if operated in a way that commanded full public confidence, would effect a considerable saving. The credit money in circulation over and above the gold held in the gold reserve represents virtually so much gold saved to the country and to the world. So long as gold is a highly valuable commodity, serving a great variety of uses besides that of money, this saving is a matter of no slight importance.

Objections to Credit Money

The case of the opponents of credit money rests, not on a denial of the economy of such a system, so long as it commands full public confidence, but on the conviction that modern governments are not yet developed to a point where they can manage such a delicate device as credit money in a way to retain public confidence. Back of credit money is the elaborate machinery of commercial credit, to be discussed in the next chapter, and in comparison with the losses that would follow any disturbance of this credit in consequence of a distrust of the essential soundness of the monetary system, the economies

traceable to credit money itself may properly be described as petty and unworthy of serious consideration.

Credit Money of the United States

The recent history of the United States furnishes abundant material in support of this distrust of the ability of a democratic government to maintain a credit money system that will be above suspicion. In interpreting this history, it must not be forgotten, however, that the credit money system was never deliberately adopted. When the United States notes were issued during the Civil War it was with no intention of adding them permanently to the circulating medium. The act which accomplished that purpose (1878) was passed as a compromise between those who favoured an out-and-out paper standard and those who desired to see all paper money withdrawn from circulation; and neither side has ever been entirely satisfied with the arrangement. In the same way the Bland-Allison Act was a compromise between those who desired the free coinage of silver, and who in 1878 controlled a majority of the votes in the House of Representatives, and those who preferred to have the use of silver confined to small change. Twelve years later the matured strength of the advocates of free coinage forced Congress as a further compromise to pass the Sherman Act, which was only prevented, through its repeal by a reluctant Congress in 1893, from so inflating the currency with Treasury notes and silver dollars as to drive gold out of circulation and debase the standard. During this period the Government was forced four different times to issue bonds on unfavourable terms to maintain the standard, and although it succeeded in this object, the distrust engendered was probably the chief cause of the crisis and subsequent depression from which the country suffered from 1893 to 1897.

Conclusion

Little favourable as is the above recital to the system of credit money, it is believed that this very experience has taught the country a lesson that it will not soon forget and that there is little danger of a repetition of similar occurrences. As opposition to the gold standard itself loses its force, as it bids fair to do, the gold reserve necessary to the maintenance of that standard and of a large volume of credit money will, it is believed, be accepted by all parties as a necessity. Although fully impressed with the unwisdom of endangering the sound-

ness of the monetary system for the sake of the petty economy resulting from the use of credit money, the author believes that general enlightenment on the money question has advanced so far that a country like the United States can make moderate use of credit money with perfect safety. He would even go to the length of advocating the gradual substitution of United States notes for the silver certificates now in circulation and the gradual liquidation of the Government's hoard of silver in exchange for gold to be added to the gold reserve. The soundness of the monetary system of the country would, in his opinion, be materially increased if, for the 500,000,000 surplus silver dollars now stored at Washington, $200,000,000 in gold were added to the gold reserve as a redemption fund for the $500,000,000 in demand notes which might be substituted for the outstanding silver certificates. Whether the gold standard supplemented by as much token money as the business community needs and as much credit money as the Government can safely maintain, is the best monetary system for a country like the United States is one of the "unsettled monetary problems," the discussion of which is postponed until some attention has been given to the subjects of "credit and banking."

REFERENCES FOR COLLATERAL READING

Among the older works on money, the best are: **Jevons*, Money and the Mechanism of Exchange; *Walker*, Money in Its Relation to Trade and Industry, and **Nicholson*, Money and Monetary Problems. The most important recent works on the subject are: **White*, Money and Banking; *Scott*, Money and Banking (good bibliography), and *Laughlin*, The Principles of Money. More condensed discussions of the subject will be found in **Hadley*, Economics, Chap. VII., and **Pierson*, Principles of Economics, Part II. Treating more especially of the monetary history of the United States are: *Laughlin*, The History of Bimetallism in the United States; **Dewey*, The Financial History of the United States; *Dunbar*, Laws of the United States Relating to Currency, Finance, and Banking, 1789 to 1891; Report of the Indianapolis Monetary Commission (1898), and *Noyes*, Thirty Years of American Finance.

CHAPTER XVIII

CREDIT AND BANKING

§ 180. Credit, or a promise to pay at a future time for a valuable consideration received in the present, is probably as old as the practice of exchange. The only condition essential to its use is confidence on the part of the creditor that the promised payment will be made when due, and this must have been among the earliest fruits of social intercourse. With every increase in the mutual confidence which binds together the members of business communities a larger field has been opened to credit, until at the present time there is hardly a business man who does not figure daily either as a creditor or a debtor in some credit transaction. The Nature of Credit

With the introduction of money as the medium of exchange, the custom arose of using the monetary unit as the medium of credit, or of deferred payments. This is now so universal that little or no exaggeration is involved in defining credit as "a promise to pay money." The written forms in which promises to pay money are drawn up are conveniently designated as "credit instruments" or "credit paper."

Like most of the terms of economics, "credit" is used in other senses than that chosen for definition. Business men talk habitually of "having credit" and of "giving credit." To have credit is to enjoy a reputation for integrity which inspires confidence or to possess property that may be pledged. To give credit, on the other hand, is to accept another's promise to pay in exchange for a valuable consideration. It is obvious that business men will "give credit" only to those who "have" it and that both are necessary to the existence of negotiable credit instruments.

§ 181. Of all forms of credit the simplest is verbal or book credit, resorted to whenever a purchaser has things "charged." This practice has many advantages. In agricultural com- Book Credit

munities in which incomes are received only at long intervals when the crops are ready for sale, book credit at the country store enables the farmer to secure supplies for himself and his family during the periods between harvests. Without it and without capital of their own, farmers in many sections would be unable to make a living. In factory towns and cities where wages are paid by the month, book credit is indispensable to the maintenance of many workingmen's families. It would be better, doubtless, if wage-earners would save enough to be able to live on the earnings of the previous rather than of the current month, but as yet there are few places in which many persons in this class do not resort regularly to credit for some of their purchases before the advent of pay day. More important, because more clearly beneficial, is the use of book credit in connection with large retail stores where it obviates the necessity for small payments. If every purchase made in a day in a city department store were paid for in money on the spot, twice as many clerks would be needed, and customers would be kept waiting four or five times as long as is now necessary. In fact it is doubtful whether well-to-do customers could be retained by a large store which insisted on doing all its business on a cash basis, and it is certain that the prices charged would have to be materially lower than in other stores to compensate for the disadvantages of the system. The extent to which book credit serves as a medium of exchange in the United States can only be guessed at, but it is believed that it figures in connection with fully one-half of the wholesale and retail transactions that take place.

In agricultural districts it is not unusual for the merchants who sell on credit to be themselves purchasers of their customers' products. Where this is the case debts contracted during the year may be cancelled by credits secured when the crops are sold and book credit may serve as the sole medium of exchange. More commonly the use of book credit simply defers payment until settlement day, when some other medium of exchange is called in to balance the account. Generally this other medium is some form of credit created by a bank, such as a check or a draft.

§ 182. A bank is an institution which deals in money and

credit. It receives deposits; pays them out again on the written order or "check" of the depositor; sells "drafts" or orders for money on its correspondents in other places; lends at interest money, deposit credits, or its own "bank notes"; "discounts" notes and bills of exchange; sells "foreign exchange" or drafts on its correspondents abroad, and sometimes provides safety-deposit boxes for the storage of valuables. In addition to commercial banks, like the national banks in the United States, to which the above description applies, there are other banking institutions which perform only a limited number of these functions and combine with them others that do not fall strictly within the field of banking. Such are savings banks and trust companies.

The Banking Business

Historically, lending is an older banking function than borrowing. Thus the Bank of England was incorporated in 1693 primarily for the purpose of lending to the Government £2,000,000 at 8 per cent. interest. The capital necessary to carry through this operation was subscribed by merchants of London, who soon fell into the habit of entrusting their surplus funds to the bank and of borrowing from it themselves when occasion required. As the deposits of a commercial bank must be repaid on demand, the practice of lending the deposits as well as the capital of a bank was at first looked upon as a dangerous innovation. Experience has shown, however, that although all depositors have the right to withdraw their deposits on any given day, in practice only a small portion of them will do so. By lending money for short periods and arranging loans so that a certain proportion of them become due each day, a modern bank is able to lend at interest from two-thirds to three-fourths of its deposits without running any serious risk of becoming bankrupt. Of course, to continue this policy, it is necessary for a bank to command the confidence of its depositors. If they are suspicious or timid, some slight circumstance may start a "run on the bank," which may prove fatal, since no bank can do a profitable business and at the same time be in a position to repay at any time all of its depositors. Banking thus depends for its success more than any other business upon the confidence which customers have in those directing the enterprise. It is this confidence that attracts deposits. The

Based on Confidence

same confidence holds them after they have been made and enables the bank to turn them to profitable account. The confidence of other banks, finally, may preserve a bank subjected to a run from becoming insolvent. For these reasons bankers should be men of tried business experience, whose integrity is above suspicion.

The Check System

§ 183. One reason why a bank may count with confidence on retaining control over the major portion of its deposits from day to day, is because the check is such a convenient means of payment that it tends to become the principal medium of exchange in communities in which banking is developed. If all of the inhabitants of a town had deposits in the same bank, it will readily be perceived that payments between them might be made exclusively by means of checks and that such payments need involve the actual withdrawal of no money from the bank. The butcher, the grocer, the dry-goods merchant, the lawyer, the physician, etc., might exchange checks at the end of each week or month, and these transfers could be noted on the books of the bank. No money would be required, because under the assumed conditions checks would accomplish all of the exchange work to be done. Only when payments to persons who were not depositors in the bank were made would the bank's deposits be encroached upon. No community has yet developed to a point where checks are used for all of its transactions. In fact, for small payments, the convenience of using checks is more than counterbalanced by the expense connected with transferring small amounts from one account to another. Moreover, as a community grows, competing banks are likely to start up, and this gives rise to checks drawn on different banks and prevents that easy transfer of accounts possible when one bank monopolises the business. To reduce to a minimum the transfers of money necessitated by the existence of different banks in the same locality, the banks themselves have devised what is known as the "clearing house." Where no clearing house exists, each bank which receives checks drawn on other banks is under the necessity of sending such checks by special messenger to the banks against which they are drawn and demanding payment for them. A clearing house is an institution where such messengers from different

banks may come together daily and exchange checks, receiving in payment only the balance due to each bank from all of the others belonging to the clearing house. By this means checks aggregating millions of dollars may be exchanged through the transfer of only 5 or 6 per cent. of the amount in money. Even this transfer involves no actual reduction in the amount of money on deposit, since some banks gain what others lose. Thus, with a well-organised clearing house, the affiliated banks in a city in which checks are the preferred means of payment may count with certainty on retaining control over the greater part of their deposits, so long as they continue to command the confidence of their depositors.

Checks and Drafts

In the United States the use of checks for paying debts in distant cities is becoming almost as general as for paying debts at home. To facilitate this process each bank has its correspondent in each of the large cities of the country, to which it sends checks drawn on banks in those cities which it has received on deposit or cashed for its customers. These checks are sent to the clearing house like any others by the bank receiving them, and, if good, are credited to the account of the bank making the remittance. The process is made still simpler by the use of drafts drawn by the customer's bank against its correspondent in the city to which remittance is made and given in exchange for checks against the customer's deposit. The obvious advantage of drafts for distant payments is that they do not need to be returned to the place where they originate before they are paid and cancelled.

Money and Credit

The use of checks, drafts, and post-office, express, and telegraph money orders as media of exchange confines the use of money in progressive communities within very narrow limits. Well-to-do people in cities in the United States already use money only for small-change transactions and for travelling expenses. As the country becomes more densely inhabited and credit institutions are perfected, it hardly admits of question that this custom will become more general and that credit will serve as the medium for an ever larger proportion of exchange transactions. This does not mean that the monetary unit will lose its importance as the standard of value, since all credit instruments are expressed in terms of money. In fact, since

credit is based on confidence, the wider the extension of credit, the more vitally important will the soundness and stability of the monetary system become.

Importance of Deposits to Banks

§ 184. Lending, which was the first, is still, from the point of view of the banker, the most important function of a bank. He is willing to accept deposits and to maintain the clerical force necessary to the efficient operation of the check system, because in this way he adds to his loanable resources. It is through lending the latter at interest that he derives the greater part of his profit. Lending deposits is so remunerative that banks, especially in cities, are active competitors for depositors. The inducements they offer range from ready accommodation with loans, which appeals especially to active entrepreneurs, to the payment of a small rate of interest even on call deposits. Some city banks even go so far as to send their own messengers to collect deposits and to cash checks for their customers, so that the latter are spared the trouble of visiting the bank. One reason for this active competition is the belief that deposits themselves attract and hold deposits. Confidence is infectious, and when a business man observes that others are entrusting millions of dollars to a particular bank he is the more ready to enrtust to it his own surplus funds.

Forms of Bank Loans

A bank's loans may assume a variety of forms depending upon the kind of security accepted and the conditions as to interest. The simplest sort of a loan is on the personal note of the borrower, secured only by his individual name. Such notes are known as "single-name paper" and are entirely acceptable to bankers when the credit of the giver of the note is above question. A more common kind of loan is on the personal note of the borrower endorsed by some friend or business associate, who, by writing his name on the note, makes himself also liable for the payment of the obligation. "Two-name paper" is, for obvious reasons, more acceptable than single-name notes. Endorsements on notes may be multiplied indefinitely, and each new name adds something to the value of the security.

Even more acceptable to bankers than personal notes are notes secured by a pledge of stocks or bonds, called in this

connection "collateral." If such notes are not paid when they fall due the banker is at liberty to sell the securities pledged and reimburse himself for principal and interest from the proceeds. To lend intelligently on collateral security the banker must be well informed as to the value of stocks and bonds, and it is for this reason that he is compelled to follow closely the variations of the stock market. In addition to lending on paper created for the purpose of the loan, banks lend by discounting notes and bills of exchange created in connection with ordinary mercantile transactions. A bill of exchange is an order drawn by one person directing another to pay a certain sum of money on a certain date to a third person named in the bill. Such bills, or drafts (a name also applied to them), are the constant recourse of merchants who sell on credit. When drawn by a merchant who enjoys the confidence of his bank they are readily discounted by the latter, that is, purchased at their face value less interest on the principal at the current rate to the time when they fall due. In such a transaction a bank virtually lends its customer the face value of the note less the discount, which is in this case the interest, relying upon him to reimburse it if the person against whom the bill is drawn fails to pay. To avoid misunderstanding, banks which discount bills of exchange usually lose no time in having them brought to the attention of the persons against whom they are drawn for their "acceptance." An accepted bill resembles an endorsed note in that two persons are legally responsible for its payment.

Call and Time Loans

Besides differing in their form, bank loans differ as to the conditions of payment. In this connection "call" or demand loans, short-time loans, and long-time loans must be distinguished. Call loans are payable at any time at the will of either lender or borrower. They are based usually on collateral security, and the borrower who fails to respond promptly to a bank's request for payment runs the risk of being "sold out," that is, of having the security sold to reimburse the bank. As such forced sales are not likely to be advantageous, borrowers on call have every inducement to meet their obligations promptly. Short-time loans are loans which "mature," or fall due, within thirty, sixty, or ninety days. Next to call loans, these are preferred by a commercial bank, which likes to have

its resources as completely under control at any given time as possible. Long-time loans are loans that run for six months or more and are made more frequently by savings banks, trust companies, and private bankers whose obligations to depositors do not usually call for repayment on demand. The intelligent banker makes the combination of these various kinds of loans that will secure for his bank the largest average rate of return without so tying up its funds that they cannot be quickly converted into cash to meet an emergency.

Banks Lend their Credit

§ 185. From what has been said thus far, it might be inferred that a bank's credit figures only on the deposit side of its business. It is credit that attracts depositors, and the bank's own capital and the deposits entrusted to it appear to the uninitiated to be the resources which limit its lending capacity. As a matter of fact, modern banks take advantage of the business community's preference for checks as a means of payment to lend deposit credits as well as money. The present-day borrower from a city bank desires, in nine cases out of ten, not money, but a deposit credit on the books of the bank against which he may draw checks at his convenience. Even if he wishes to pay at once to another the whole amount borrowed, he will usually prefer to draw a check for it rather than to pay it in money. From this it follows that the deposit liabilities of a modern city bank represent quite as largely sums loaned by it to business men as sums entrusted to it by such men. A bank lends its credit quite as freely as it utilises that credit in inducing others to lend to it.

By Means of Deposit Accounts

The same considerations which cause *bona fide* deposits to be left under the control of the bank, so long as it retains the confidence of its customers, causes loaned deposits to be left with it also. The man who borrows from a bank wants ordinarily purchasing power to use in some business transaction. This purchasing power may pass to someone else, but under present conditions the new owner is almost certain to entrust it, at least temporarily, to a bank for safe-keeping. Presently his business dealings may cause him to transfer it, or a part of it, to a third person, but again the chances are all in favour of its being left on deposit with a bank rather than being withdrawn as money. Before the purchasing power

loaned by the bank has left its control, or the control of affiliated banks, it is more than likely, in the ordinary course of business, that the loan will mature and equivalent purchasing power will be returned to the bank. In this fashion a bank is able to receive interest for assuming demand liabilities which it may not, as a matter of fact, ever be called upon to discharge. It must always be ready to discharge them on pain of bankruptcy, but it may count with confidence on being called upon to discharge only a portion of them from day to day. This ability of a bank to make a profit by lending that intangible thing called credit is what makes successful banking so profitable and at the same time exposes bankers to such serious temptations. Banking experience in a given locality may suggest that a cash reserve of at least 30 per cent. of the deposit liabilities ought to be held in readiness to satisfy at any time a bank's depositors. If this amount is held, a loan business, in the form of deposit liabilities, of $1,000,000 may be maintained by means of a reserve of $300,000. The same $300,000 would maintain a loan business of $1,200,000 if 25 per cent. were an adequate reserve. The interest on the additional $200,000 is the temptation which is constantly presented to the banker to depart from the lessons of banking experience and maintain a somewhat smaller reserve than is entirely safe. A reserve of 25 per cent., 20 per cent., or even 10 per cent., might be adequate under ordinary business conditions. But the reserve must be sufficient to meet not only ordinary demands, but any demands that are likely to arise. It is because bankers are apt in times of business prosperity to forget the lessons of the past that the banking business has appeared a fit object for state supervision and regulation.

Or Bank Notes

Besides lending their credit in the form of deposit liabilities, banks which enjoy the privilege of issuing bank notes, that is, the bank's promises to pay on demand without interest the sums named on the face of the notes, may lend their credit in this form. When the credit of a bank is securely established in a community its promises to pay may be considered as "good as gold." Under such circumstances borrowers from the bank will be as willing to accept bank notes as legal money in case they wish some other means of payment than

their own checks. In cities, where checks can be presented to the bank against which they are drawn within a few hours and their value established, most business men prefer them to bank notes. In country districts, however, checks are not acceptable because of the risk involved in trusting the drawer of a check until it can be presented at the bank against which it is drawn. If confidence is felt in the bank, no such objection will be raised to bank notes, since they carry on their face the liability of the bank. It follows that country banks enjoying the privilege may loan their credit through the issue of bank notes, when otherwise loans would have to be made in cash and credit could enter into their business only as a means of attracting depositors.

Interest on Bank Loans

§ 186. In a previous chapter interest was described as the share of wealth assigned to capitalists for the use of their capital, or as the earnings of capital. Interest on bank loans does not at first thought appear to fall under this definition. Are the money and credit which banks lend capital? If not, what service do these render to induce borrowers to pay interest for their use? Satisfactory answers must be given to these questions to justify our definition of interest.

Paid for Control over Capital

Those who borrow from banks wish, usually, purchasing power to enable them to obtain—or, at times, to retain—control over a share of the community's capital. What they really borrow is not the money or the deposit credit which the bank transfers to them, but the concrete forms of capital, economic goods of various kinds, or stocks and bonds which represent part ownership in aggregates of economic goods, which they purchase with this money or deposit credit. The purchasing power which the bank supplies is simply the convenient medium by means of which control over capital is secured, and interest is paid for its use, ordinarily, simply because the capital which it represents earns interest. It is a derived form of interest accounted for by the interchangeability of purchasing power and capital goods.

Gold Coin is Capital

For a community which uses as its medium of exchange only self-regulating standard money, for example, gold coin, the answers to the questions propounded above may be given without hesitation. Such gold coin is itself capital, that is,

the product of past industry used as an aid (as the "tool of exchange") to further production. Only so much wealth will be thrown into this form as can earn the same rate of return that is obtained by other kinds of capital goods, and this return will be secured because, as the universal medium of exchange, money represents all other goods. It is the transition form into which capital is thrown as it passes from the control of those who do not want it as embodied in particular capital goods, to those who do want it as so embodied, and confers upon its possessor command over whatever combination of capital goods he may require. His willingness to pay interest for its use follows necessarily from this command over interest-earning capital goods which it bestows.

Credit is Not Capital, but it Does the Work of Standard Money

But no community uses standard money only as its medium of exchange. The credit of the government is called in to give currency to token and credit money. Where banking is developed, bank credit also serves on a vast scale as a medium of exchange. Can this credit which so largely takes the place of standard money in modern business communities be properly included under the definition of capital? If not, what service does it render which entitles those who furnish it to interest for its use? It must be clearly asserted at the outset that credit is not capital. It may enable the person who enjoys it to secure capital. It may even, to the extent that it serves equally well as the medium of exchange, take the place of capital in the form of standard money. But it is not itself capital. Nevertheless, interest is paid for its use for exactly the same reasons that it is paid for the use of standard money. What the business man wants when he borrows from a bank is purchasing power. If the bank can supply this in the form of a deposit credit, against which he may confidently check at will, or in the form of bank notes, he is as well, if not better, pleased than if it supplies it in the form of standard money. What he really wishes is the goods to be bought for the purchasing power loaned him. It is for these that he is willing to pay interest. It is even these that are really loaned to him, since the bank transfers to him a part of its own control over the collective wealth of the community. The purchasing power which figures in the transaction soon passes

on to someone else and continues to circulate in the community, changing hands perhaps hundreds of times before the loan falls due and equivalent purchasing power must be returned to the bank by the borrower. A demand for bank loans is thus at bottom not a demand for money nor for credit, but a demand for a part of the community's capital. Money or other purchasing power is transiently needed to put the borrower in control of the capital he wishes, but its task is quickly done, while the capital remains in the borrower's possession. His demand for it is due, not to his position as a borrower, but to his position as a prospective buyer, and the aggregate demand for money is no greater in a community in which all purchases are made with borrowed money than it is in a community where the same volume of purchases is made with money owned by the purchasers themselves.

Limitations on the Use of Bank Credit

§ 187. Conceding the accuracy of the above analysis, the reader may be inclined to ask why bank credit, the cheaper medium of exchange, does not, in obedience to Gresham's Law, entirely supersede standard money. This is because there are very definite limits to the use that may be made of it. In the first place, it must never be forgotten that bank credit is efficient as a medium of exchange only so long as it is convertible at will into legal money. Bankers must be constantly on their guard against unduly multiplying their deposit or note liabilities, and the public must be constantly on its guard against trusting bankers who are not safe, conservative men. These two considerations confine the banking business to those men who may be trusted not to be carried away by the possibilities of gain afforded by their position, and cause such men to regulate their use of credit by reference to the reserve of legal money which they are able to maintain as a guarantee that all obligations will be instantly discharged. A second point to remember is that the nature of bank credit limits its use to borrowers whose need of purchasing power is only temporary. A commercial bank cannot lend on long-time paper to any considerable extent without losing that quick control over its assets that is indispensable to its solvency, since nearly all of its liabilities must be discharged on demand. Its loans must be on call or short-time paper, and this confines its services to business men

whose transactions are of such a nature that they can count confidently on ability to repay after a brief interval what they have borrowed.

Interest on Call Loans Usually Low

Within the limits determined by the nature of their business, commercial banks compete actively to lend their credit at interest. Where banking is well organised this insures to those business men who can avail themselves of call and short-time loans, accommodation at rates of interest as low, and at times even lower than that paid by the safest long-time investments. The lowest rate normally is that paid for call loans. Only men who are engaged in operations on the stock exchange, which they believe they can conclude without loss on short notice, venture, usually, to make themselves liable for loans of this character. In contrast with the limited demand for such accommodation on the side of borrowers, there is an almost indefinitely large supply of funds to be loaned at call on the side of lenders. Other things being equal, call loans are those dearest to the banker's heart. They enable him virtually to "have his cake and eat it too," to retain control over his assets at the same time that these are earning interest. These two circumstances explain why the call rate is sometimes as low as one-half of 1 per cent. and usually lower than the rate on the safest bond investments. The call rate is also the one subject to the most violent fluctuations. Those who borrow on call do so nearly always to buy stocks or bonds. If their calculations miscarry, they may be asked to repay at the very time when it is most awkward to do so. Rather than sell, on a depressed market, the securities they have purchased, borrowers are often willing to pay extravagant rates of interest for a few days in the hope that the prices of these securities will rally. It is thus not uncommon for the call rate to rise to 50, 75, or even 100 per cent. for a few hours or days when a panic in stocks is in progress and banks are calling in their loans in anticipation of stormy weather.

Short-time Loans

Loans on short time, which are less attractive to lenders, are, on the whole, more attractive to borrowers, but, as before, those who wish the use of purchasing power for thirty, sixty, or ninety days only, are a limited class. The normal relation between supply and demand fixes the rate of interest on short

time loans comfortably above the call rate and even somewhat above the rate on such permanent investments as safe railroad bonds or real estate mortgages. The rate on long-time loans is little affected by the use of bank credit as a medium of exchange in place of standard money, for the reason already explained that commercial banks cannot afford to tie up their loanable funds under long-time contracts.

Competition Adjusts Bank Rate of Interest to General Rate

Speaking generally, it is the tendency in countries in which the banking business is open to all who can command the requisite capital, as it is in the United States, for the supply of funds loanable at call or on short time to be multiplied until the rate of interest on such loans bears a certain normal relation to the rates of interest in other fields of investment. Ability to loan their credit as well as standard money enables commercial banks to satisfy the requirements of business men at lower rates of interest than could possibly be offered if every loan negotiated meant so much cash withdrawn from the control of the bank. Competition prevents the banks from retaining for themselves the profit which results from the use of their credit. They share it with their customers, and through these customers the whole business community is benefited. At last analysis, rates of interest on bank loans are determined, like other rates of interest, by the earning power of capital. Credit serves merely to supplement standard money as a medium of exchange and introduces no new principle to necessitate a qualification of the explanation of interest already given.

Ought Banking to be Regulated?

§ 188. There is still great difference of opinion among economists as to whether banking ought to be entirely free or regulated by law. The arguments in favour of regulated banking are similar to those in favour of freedom in other fields of business enterprise. It is pointed out that the credit relations into which banks enter with their depositors and borrowers are purely voluntary, and that ordinary economic motives tend to concentrate the business into the hands of upright and conservative men. Moreover, it is maintained that the normal expansion and contraction of bank credit are of such vital importance to the whole business community that their regulation ought to be entrusted to those who have been chosen by a process of natural selection to manage the banking business, and not sub-

jected to administrative rules of thumb. Bank credit, in the form of deposit accounts and banks notes, is a highly flexible element in the medium of exchange. By means of a check a million dollars may be paid out as readily as one dollar. Where all business men have bank accounts the medium is made absolutely elastic by means of this convenient credit device. Bank notes are not quite as elastic as checks, and yet when additional currency is required to pay wages and interest at the end of the month, the half-year, or the year, to move the crops at harvest time, or to provide for some other passing need, the nature and extent of which are perfectly well understood, banks, which are not restricted, may meet the emergency by adding to their note liabilities.

The importance of an elastic element in the medium of exchange can hardly be exaggerated. In every community the need for the medium of exchange is variable. At certain times few exchanges take place, and a small amount of money and its substitutes will maintain prices at their normal level. At other seasons buying and selling are active, the medium of exchange is in great demand and unless, as a whole, it expands readily to meet the situation, the disease known as a "money stringency" will attack the community with its accompanying symptoms, a rising rate of interest and falling prices. A varying demand for the medium of exchange is especially characteristic of agricultural communities. During the greater part of the year the buying and selling which take place among farmers are of very small proportions. At harvest time, however, the entire product of the year's industry changes hands, often within a period of two or three weeks. Unless the medium of exchange expands readily at such seasons, a money stringency is sure to occur and prices will fall at the very time when it is most important to the whole community that they should be sustained. Advocates of unregulated banking maintain that elasticity in the check and note currency can best be secured by permitting bankers to exercise perfect freedom in the conduct of their business.

Reasons for Favouring Regulation

Notwithstanding the force of the arguments in favour of unregulated banking, nearly all countries subject their banking institutions to some degree of control, and for reasons which

seem to the writer conclusive in favour of the policy. The extension of banking depends primarily upon the presence in the community of mutual confidence. Depositors and note-holders must have confidence in the bank officials. Banks, in turn, must have confidence in those to whom they lend. This mutual confidence is of slow growth, and since its fruits are so important everything should be done to preserve it after it has developed to a point which makes banking practicable. If each bank were judged by itself in the popular mind the arguments in favour of free banking would be convincing; but the popular mind does not judge each bank by itself. It judges of the institution of banking as a whole. One bank failure in a community in which banks are just developing will serve to bring the whole business into disrepute. For this reason it is to the interest of bankers themselves to have their business subjected to regulations which will hold them all up to a certain standard of honesty and conservatism. Admitting the need of government regulation as a condition to the highest development of the banking business, it remains a difficult question to decide in any given case how far regulation should go. This concrete aspect of the problem can best be considered in connection with a description of the national banking system of the United States.

History of the National Banking System

§ 189. The national banking system of the United States was an outgrowth of the Civil War. To meet the expenses of that struggle the Federal Government was forced to issue bonds on an unprecedented scale. The national banks were created to furnish a market for these bonds and at the same time to take the place of the State banks, which were not in a sound condition in all sections of the country. The original act, passed in 1863, was revised in important respects by the National Bank Act of June, 1864, which, as amended by subsequent statutes, is still the basis of the system.

The Present Law

General supervision over the national banks is vested in the Comptroller of the Currency, who represents the Secretary of the Treasury in all his relations with these institutions. The law permits the former officer to issue certificates of incorporation, valid for twenty years, to any five reputable citizens who wish to establish a national bank and can command the requi-

site capital.* Banks organised with a capital of $150,000 or less must invest one-fourth of their capital in United States bonds and deposit them with the Comptroller of the Currency. Originally, larger banks had to so invest one-third of their capital, but at present the requirement for such banks is the deposit of $50,000 only in bonds. Any national bank may so invest its entire capital. In exchange for the bonds deposited, the Comptroller is required to issue national bank notes up to their par value (or their market value if they are quoted below par). Banks which receive such notes must deposit, in addition to the bonds, a redemption fund in lawful money equal to 5 per cent. of the face value of their notes in circulation. On the strength of this double security the United States Government assumes responsibility for the redemption of such notes, with the consequence, as already pointed out, that they are considered as safe throughout the United States as any kind of money in circulation. Besides issuing notes—a function practically confined to the national banks, since the demand notes of State institutions are subject to a tax of 10 per cent. under an act passed in 1865—the national banks may engage in a general banking business, except that they may not lend on the security of real estate.

Protection for Depositors

Depositors in the national banks are protected in various ways. When such banks fail, their stockholders are liable to assessment, to make up any deficit, up to the full par value of their stock. The banks are required to make at least five reports of their condition in the course of each year on such dates as may be designated without previous notice by the Comptroller. They must also submit to periodic examinations—also unannounced—by bank examiners acting under the orders of the Comptroller and empowered to inquire into every detail calculated to throw light on the true condition of the bank examined. Finally, the banks are divided into three classes—central reserve city banks (those of New York, Chicago, and St. Louis, on July 1, 1903), reserve city banks, and others. The first class are required to keep continuously a reserve in lawful

* The minimum capital in places of 50,000 or more inhabitants is $200,000. An amendment added in 1900 makes the minimum for places of 3000 inhabitants or less $25,000.

money equal to 25 per cent. of their deposit liabilities.* The second class must also have a reserve of 25 per cent., but one-half of this may be kept on deposit with national banks in the central reserve cities. The reserve required of banks in the third class is only 15 per cent., and of this three-fifths may be kept on deposit with national banks in reserve cities. Whenever a bank's reserve falls below the legal minimum it is required to discontinue its discount business until the reserve is restored, and if this is not accomplished within thirty days it may be placed in the hands of a receiver.

Faults in System

§ 190. On the whole, the banking system which has grown up under the regulations just described has more than justified the anticipations of its authors. National bank notes have proved a perfectly safe medium of exchange, and depositors in national banks have lost surprisingly little as the result of bank failures since the system came into operation. There are, however, two respects in which, in the opinion of most authorities, the system admits of improvement. These are in connection with the note-security and reserve requirements of the present law.

United States Bank Notes are Perversely Elastic

The primary reason for permitting banks to issue notes is to enable them to supply the business community with a cheap and elastic medium of exchange in sections and for transactions for which checks are unavailable. The bank-note system of the United States is perversely elastic. Helpful elasticity results when banks are put in a position which makes it profitable for them to issue additional notes when more currency is needed, and to withdraw notes from circulation when the currency is redundant. One symptom of a need for currency, in districts which cannot make large use of checks against deposits as a medium of exchange, is the withdrawal of deposits, and this must force banks to raise their rate of interest unless they can meet the emergency by an issue of notes. A redundant currency, on the other hand, is indicated by an increase in deposits. If the bank note currency is elastic it will expand to satisfy the increased demand for currency in the former case, and contract

*This requirement does not apply to deposits of the United States Government in national banks, but the latter must be secured by bonds deposited with the Secretary of the Treasury.

in the latter. This takes place under an unregulated banking system, but under the system of the United States, which requires, in addition to the 5 per cent. redemption fund deposit, a dollar-for-dollar bond deposit, a contraction in bank deposits makes profitable not the issue, but the withdrawal of notes. When deposits are being withdrawn a bank wishes to increase its available funds. It cannot do this in the United States by issuing bank notes, because for every one hundred dollars so issued more than one hundred dollars must be tied up in the premium bonds and redemption deposit required as security. On the contrary, it can do it by withdrawing bank notes from circulation, because for ninety-five dollars in legal money sent to Washington for this purpose a bond that may be sold at once for more than one hundred dollars will be returned. It is only when the currency is already redundant that national banks are likely to find it profitable to increase their note issues. At such times they have unloaned money in their vaults. Investing this money in Government bonds which afford an interest and receiving back a nearly equal sum in bank notes may, under these circumstances, prove profitable. The tendency of bank notes under our national banking system is thus to contract when expansion is desirable, and to expand when the currency is already redundant. The system thus serves to intensify evils which a better system would help to cure.

Freer Note Issue Necessary

Space will not permit a detailed discussion of the remedies that have been proposed for the defect just described, but it is obvious that they must include modifications in the law calculated to give the country a less perfectly secured bank note. Only when the national banks are permitted to issue notes on something less than dollar-for-dollar security will they find it profitable to add to their circulation when more currency is needed, and to contract it when the medium of exchange is redundant. The protection of note-holders must be sought along the line of only slightly more stringent regulations than those which now protect depositors, if bank credit in the form of bank notes is to become as elastic an element in the medium of exchange as is already bank credit in the form of deposit accounts, against which checks may be drawn at will.

Canadian law permits Dominion banks to issue bank notes up to the full amount of their paid-in capital with the sole limitation that they must deposit 5 per cent. of the value of such notes in a redemption fund, for the maintenance of which they are jointly responsible. By adding to this collective responsibility the provision that bank notes shall constitute a first lien on the assets of failed banks, the law has given Canada an elastic bank-note currency under which not a single dollar has yet been lost by holders of the country's bank notes. There seems good reason to believe that a modification of this system of "asset currency" might be adopted in the United States with advantage both to the banks and to the public.

Defect in Reserve Requirements

The second defect referred to consists in permitting the reserves required by law of national banks in classes two and three to be deposited in part with other banks. To the extent that legal reserves are necessary, they should be required without qualification of the banks for which the reserve is intended. The present system of the United States tends to concentrate a large part of the reserves of national banks in the national banks in central reserve cities, and especially in New York. Since the latter treat the deposits of other banks in much the same way that they do the deposits of individuals and maintain ordinarily only the 25 per cent. reserve against them required by law, the banking system of the whole country is exposed to serious danger whenever any unusual demand is brought to bear on the banks of New York. This concentration of responsibility for the whole credit system in the financial centre of the country is to some extent natural and inevitable, but it seems in the highest degree imprudent to deliberately encourage and extend it, as does the present law. Requiring each bank to keep in its own vaults its legal reserve would serve to foster conservative banking, whereas the present system conduces to recklessness and disregard on the part of the banks of their individual responsibility to their own depositors.

State Banks

§ 191. In addition to the national banks, of which there were on June 9, 1903, 4939 with an aggregate capital of $743,500,000 and aggregate loans and discounts equal to $3,415,000,000, there are in the United States an almost equal number of State banks and a large number of savings banks and trust com-

panies. The regulations in regard to State banks vary greatly. In several of the Eastern States (*e. g.*, Massachusetts and New York) they are as rigid as those applying to national banks. Such States have staffs of officials charged with the supervision of their banks, and the latter are in many instances as highly regarded as the national institutions with which they compete.

Savings Banks

Saving banks are institutions organised, as the term implies, to encourage saving on the part of persons of limited incomes. They are often purely mutual institutions, the entire profits being distributed as interest to the depositors or accumulated as a surplus for the latter's protection. As a general rule, they receive only time deposits, on which they pay interest ranging in different sections of the country from 2½ to 4 per cent. The law usually defines very narrowly the security on which they may make loans and the kinds of investments open to them. The aggregate deposits credited to the 1036 savings banks in the United States on June 30, 1902, were $2,650,000,000.

Trust Companies

Trust companies, although organised primarily for the administration of estates and other trust funds, have come to take a prominent part in the banking business of the country. Owing to their comparatively recent origin, they have not yet been subjected to as strict regulations as apply to State and national banks, and in consequence they are able to carry on their banking operations with greater freedom. In the financial centres of the country their growth in recent years has been phenomenal. On January 1, 1903, in New York State alone they commanded a capital of $190,671,155 and deposits of $823,797,853.

Conclusion

§ 192. It would be difficult to exaggerate the importance of the services which credit, and especially bank credit in its various forms, renders the business community. Through the agency of banks a cheap and elastic medium of exchange is substituted for money, which is both costly and for many purposes inconvenient. They serve to gather together the small savings of thousands of persons, to whom they are of no immediate use, and to put them at the disposal of active entrepreneurs on terms which enable the latter to produce at a minimum of cost. Finally, they are the ready agents of the

Government and of great corporations when large sums of purchasing power are required, and carry through easily financial operations which without their aid would be fraught with most serious consequences to the whole business world. Notwithstanding these services, there is in the United States a widespread distrust of banks and bankers, which has been reflected more than once in Federal and State legislation. The impression is widely prevalent that while banks themselves reap large gains by lending their credit at interest, no corresponding benefits extend to those who borrow from banks. That this belief is without foundation has been suggested in the preceding sections. In banking as in other branches of business competition is a force which compels a sharing of profits with the whole community. The more fully the banker is permitted to utilise his credit either in the form of deposit accounts or bank notes, the lower will be the rate of interest which he can afford to take for his services, and competition may be relied upon to force him to accept this lower rate. The guiding principle in connection with bank regulations should be to grant the fullest liberty that is compatible with a reasonable degree of security. Little fear need be entertained lest in the long run this liberty will not be used to advance the general good.

REFERENCES FOR COLLATERAL READING

In addition to the references given in the preceding chapter the following are suggested: **Dunbar*, The Theory and History of Banking; *Macleod*, Theory and Practice of Banking; *Bolles*, Practical Banking; **Conant*, History of Modern Banks of Issue; *Knox*, History of Banking; *Hadley*, Economics, Chap. VIII.

CHAPTER XIX

SOME UNSETTLED MONETARY PROBLEMS

Unsettled Problems

§ 193. Although the subject of money was one of the first to engage the attention of economists and thousands of volumes and pamphlets have been written concerning it, there is still great difference of opinion in regard to some of the problems which it presents. These have been styled "unsettled," to warn the reader that in this chapter controverted points are considered and that he must be on his guard against accepting too readily the opinions of the author. The first problem relates to the factors which determine the value of money or—what is the same thing—the level of prices.

The Value of Gold and Prices

The influences which connect the value of the dollar of the United States with the value of 23.22 grains of gold have already been explained.* So long as these continue active the gold standard must be maintained and "the value of money" will be merely another expression for the value of gold. Our problem reduces therefore to an explanation of the circumstances which determine the value of gold. In previous chapters it has been shown that the value of any commodity depends transiently upon the temporary relation between the demand for it and its supply and in the long run on the more permanent influences which adjust the normal supply to the normal demand. The demand for a commodity springs from the various uses to which it is put. In the case of gold we may distinguish these as the industrial and arts uses which give rise to what we will call the "arts demand," the use as a medium of exchange which gives rise to the "monetary demand" proper, and the use as a reserve of value for the redemption of credit money and credit instruments generally, which gives rise to a secondary monetary demand, which we will call the "reserve demand." An increase in either of these three forms of demand

*Chapter XVII., Sections 175 and 176.

tends to increase the value of gold and incidentally to withdraw it from other uses to the use in connection with which the increase in demand has arisen. On the other hand, a decrease in the supply of gold will tend to increase its value. Unless the increased demand is balanced by an increased supply or the decreased supply by a decreased demand, the increase in value will actually occur and the level of prices will fall. Exactly opposite results, of course, follow a decrease in either form of demand or an increase in supply.

Demand for Gold in Arts

§ 194. Although the demand for gold for different uses does not admit of exact measurement, something may be said in regard to the circumstances which cause it to vary. The principal source of the arts demand is the use of gold for ornament and display. With the progress of civilisation this demand is lessened as regards one section of the community, and increased as regards another. Highly developed men and women care little for gold jewelry, gold plate, etc., but on the other hand with the increase of general wealth these things are brought each year within the reach of less highly developed people who do care for them greatly. On the whole, the arts demand for gold is extremely elastic and gives no promise of decreasing relatively within the immediate future.

Monetary Demand

The monetary demand for gold depends upon the number of exchange transactions to be effected with gold coin as the medium of exchange. If this is thought of with reference to a particular period of time, as for example a week or a month, allowance must be made for the "rapidity of circulation," that is, the number of exchanges in which, on the average, each gold coin will figure within the period. Some writers speak of the rapidity of circulation as though it added to the supply of money, but it seems more logical to describe it as a cause lessening the demand. No one would think of an improvement which doubled the speed at which trolley cars move through city streets as increasing the supply of such cars, and there seems as little reason to credit such influence to changes which increase the rapidity at which pieces of money circulate. Both serve to lessen the community's need for such conveniences for the accomplishment of given amounts of work.

Much confusion in regard to the demand for money has re-

sulted from failure to discriminate between it and the demand for wealth in general. Command over money carries with it command over wealth and this has led to the identification of the two. But it is equally true that command over any valuable commodity, such as wheat or iron, carries with it command over other valuable things, and yet no one would say, as economists of standing have said of money, that either of these is the one thing "of which no one ever has enough." * As a matter of fact the demand for money is as strictly limited as the demand for any other useful thing. Far from being the one thing "of which no one ever has enough," it is the one thing which people are most prompt to get rid of when they receive it in any considerable quantity. No one wants to be cumbered with more money than he expects to need as a medium of exchange, and anything in excess of this is normally turned over to banks and other financial institutions and by them passed on to borrowers whose need for money is not entirely satisfied. Of course there are instances in which persons of disordered imagination have coveted gold for its own sake, but even misers of this type demand, in the economic sense, only so much gold as they can afford to own, no matter how unlimited their desire for gold may be.

Not Unlimited

§ 195. The number of exchange transactions to be effected in a community depends, of course, upon the amount of wealth produced and the organisation of production, that is, the extent to which a division of labour is carried out, the number of middle-men and speculators who intervene between producers and consumers, and the frequency with which ownership over the instruments of production and the stocks and bonds, which represent them, change hands. No one of these admits of statistical measurement, but this is because of the incompleteness of the available statistical data and not at all because they are not perfectly definite and measurable. Given the number of exchanges to be effected, the demand for gold to which they give rise depends upon the proportion of them that are accomplished by means of barter and by means of credit. In comparison with credit, barter now plays such an insignificant rôle that its influence may be almost ignored. Some intimation

Money and Credit

* Professor William Smart in *Studies in Economics*, p. 145.

was given in the preceding chapter of the extent to which credit now serves as a medium of exchange. It was there stated that probably one-half of the ordinary mercantile transactions that take place in the United States are effected by means of book credit. This is a mere guess, but somewhat more accurate data may be given in reference to the part played by forms of credit money and bank credit as media of exchange. The statistics given in Chapter XVII., Section 175, indicate that more than one-half of the monetary stock of the United States is token and credit money, and experience and observation prove that it is this rather than gold coin that serves as the actual medium of exchange in nearly all transactions in which money is used. In other countries gold coin is more largely used, but in all, token and credit money are supplementary media of exchange. The importance of bank credit in the United States is indicated by the following facts: According to the report of the Comptroller of the Currency the deposits in national banks on June 9, 1903, aggregated $4,628,000,000, of which $3,231,000,000 were the deposits of individuals. The volume of business which this and the deposit currency of State banks and trust companies is capable of accomplishing is indicated by the fact that in 1902 the total value of the checks which passed through the clearing houses of the country was $118,118,000,000. When it is remembered that in addition to this enormous total there was a considerable value of checks which failed to pass through the clearing houses, some notion is obtained of the extent to which the exchange business of the country is affected by means of bank credit. These statistics for the United States are paralleled in other English-speaking countries, and although the use of bank credit has been less highly developed by other peoples, there is no civilised nation in which it is not by far the most important single medium of exchange. From this fact it results that the demand for gold as a medium of exchange even in gold-standard countries is in ordinary times insignificant in comparison with the volume of exchange transactions effected. It follows also that this insignificant demand is capable in times of emergency, when the use of credit is contracted, of expanding to alarming proportions.

Recent Fluctuations in Monetary Demand

§ 196. In consequence of the changing monetary policies of leading commercial nations the monetary demand for gold has been subject to remarkable variations during the last thirty years. Each new country that has adopted the gold standard has been forced to secure, at whatever cost to itself, some share of the world's gold supply. This has given rise to a veritable "scramble for gold," which threatened for a time to have disastrous consequences. There seems to be every reason to think that this extreme competition for gold is now over, and that the adoption of the gold standard by the few countries which have lagged behind in this movement will not increase the demand for gold unduly, for the simple reason that the entire monetary needs of these countries are small. The monetary demand for that metal of countries already on the gold standard is likely, in consequence of the increased use of credit money and substitutes for money that seems probable, to increase in coming years at a somewhat slower rate than their wealth and the resulting number of exchange transactions to be effected. Considering the two sources of demand together, we may conclude with some confidence that the monetary demand for gold is not likely to increase in the immediate future—except as it is affected by temporary credit disturbances—more rapidly than does general wealth.

The Reserve Demand

§ 197. The reserve demand for gold includes not only the demand of governments which have to provide for the redemption of their token and credit money and of banking institutions which have their credit obligations to meet, but also the demand of individuals who wish for some reason to have by them a store of the precious metal. This demand has increased even more strikingly in the last thirty years than the monetary demand for the reason that most of the countries which have established the gold standard during that period, have contented themselves, as has the United States, with securing sufficient gold to insure the convertibility of their other forms of money without actually withdrawing these from circulation. This has necessitated in all parts of the world the accumulation of large gold reserves.

The following figures give the gold holdings credited to the state banks of different countries about July 1, 1903: Bank

of France, $503,000,000; Bank of Russia, $373,000,000; Bank of Austria, $229,000,000; Bank of England, $184,000,000; Bank of Germany, $130,000,000; Bank of Italy, $73,000,000; Bank of Spain, $72,000,000; Bank of Belgium, $24,000,000; Bank of Holland, $20,000,000. The United States Treasury held on the same date some $252,000,000 and the national banks some $300,000,000 in gold. These gold hoards, which aggregated over $2,000,000,000, represent but a part of the world's reserve demand for gold, as they include neither the government's reserves in many important countries nor the reserves in other than the State and national banks mentioned. If all of the different items which should be included could be exactly calculated, it would doubtless be found that the reserve demand for gold is larger than either of the other demands. This reserve demand, moreover, is likely to grow relatively to keep pace with the increasing use of credit as a medium of exchange which has been predicted. The time may indeed come, as it has already in the eastern cities of the United States, when the reserve demand for gold will practically supersede the monetary demand because the universal conviction that gold may be obtained at will in exchange for credit money will cause no one to want it.

Conclusion in Reference to Demand

To sum up what has been said in regard to the demand for gold, it appears that the arts demand is highly elastic and likely to continue so for some time to come. The monetary demand which has expanded at a rapid rate during the last thirty years has now subsided to what we may describe as its normal condition, in consequence of the fact that the adoption of the gold standard by the commercial world is an accomplished fact. It is likely to increase in future years somewhat less rapidly—at least after the final steps in the adoption of the gold standard as the standard of the world have been taken—than the volume of exchange work to be done, because of the probable increase in the use that will be made of credit as a medium of exchange. The reserve demand which, too, has grown enormously during recent years has also attained, at present, a more normal condition. It is likely to increase relatively somewhat more than does the volume of exchange work to be done, to keep pace with the increased use of credit that is anticipated. Considering all

three forms of demand together we may conclude that the demand for gold in coming years is likely to grow at about the same rate as the world's wealth, but that it will be subject to violent fluctuations until the machinery of credit is so perfected that it is no longer liable to the periodic break-downs which were so common during the last century.

The Supply of Gold

§ 198. The supply of gold admits of more exact measurement than the demand for it. According to different authorities the world's stock by 1850 equalled between $2,000,000,000 and $3,000,000,000. The production since that date has amounted to about $7,000,000,000, so the present stock is probably between $9,000,000,000 and $10,000,000,000. The history of gold production since 1850 is briefly summarised in the following statistics: From 1851 to 1860 the annual production averaged $132,000,000, attaining in the latter year the value of $134,000,000, which was not equalled in any subsequent year until 1892. The lowest point was reached in the early eighties, since when there has been a fairly steady increase, as is shown by the following table:

*World's Production of Gold**

Annual average,	1881–1885,	$102,000,000
" "	1886–1890,	110,000,000
" "	1891–1895,	163,000,000
" "	1896–1900,	261,000,000
	1901,	267,000,000
	1902,	305,000,000

Probable Future of Gold Supply

As these statistics indicate, the production of gold responded but slightly to the increased monetary and reserve demand prior to 1890. Since that date the response has been increasingly adequate. The largest production in any single year to date ($315,000,000) was attained in 1899 on the eve of the South African War, but there is every indication that this record will be surpassed in the near future and that a production of from $300,000,000 to $400,000,000 a year will be maintained at least during the present decade. What is even more important is the fact that the production of gold promises

*Compiled from table in the *Annual Financial Review* for 1903, p. 40.

to be more elastic, that is, to respond more readily to changes in the demand, in the future than it has been in the past. Before enlarging on this point it will be well to consider the changes in the value of gold that have actually occurred in the recent past.

Measuring the Value of Money by Method of Index Numbers

§ 199. The value of money is measured, as is the value of anything else, by the quantity of other commodities for which it will exchange. When two periods are to be compared a difficulty arises because the value of money will be found usually to have changed in different directions as regards different commodities. This is avoided by the method of index numbers. To illustrate its use, suppose that wheat, anthracite coal, pig iron, cotton cloth, and copper be taken as representative of all commodities, and that it be found that on January 1 of a certain year one dollar would buy one bushel of wheat, one-fifth of a ton of anthracite coal, one-twentieth of a ton of pig iron, twenty yards of cotton cloth, and ten pounds of copper, while on January 1 of another year a dollar would command three-fourths of a bushel of wheat, one-fourth of a ton of coal, one-tenth of a ton of pig iron, twenty-five yards of cloth, and five pounds of copper. Using one hundred as an index number for the different commodities we should write out the following tables for the two dates:

January 1, first year			January 1, second year		
$1.	= 1 bushel wheat	= 100	$1.	= ¾ bushel wheat	= 75
	= ⅕ ton coal	= 100		= ¼ ton coal	= 125
	= 1/20 " iron	= 100		= 1/10 " iron	= 200
	= 20 yards cloth	= 100		= 25 yards cloth	= 125
	= 10 pounds copper	= 100		= 5 pounds copper	= 50
$5.	=	= 500	$5.	=	= 575
or $1.	=	= 100	or $1.	=	= 115

The calculation indicates that the value of a dollar as measured in these five commodities increased between the two dates from one hundred to one hundred and fifteen, or 15 per cent. By extending it to include all commodities, we could obtain similar averages for the two dates that would seem to give a comprehensive view of any change in the value of money that might have occurred between them.

Defects in the Method

This method, called that of simple averages, is open to the objection that it treats all commodities as of equal importance in their influence on the value of money. It is obvious that there is chance of error when such diverse goods as coal and chewing gum are each given the same index number for the purpose of a calculation. To avoid this three different expedients have been proposed: (1) to confine the calculation to the principal commodities which figure in a country's trade or consumption; (2) to assign different index numbers to different commodities, "weighted" so as to correspond to their different degrees of importance; (3) to repeat important commodities in different forms in the calculation so that they will have greater influence on the result than unimportant commodities that appear but once. Space will not permit a detailed consideration of the merits of these different plans, but it may be said, in general, that experience shows that little change in the result is to be expected from their use and that the method of simple averages judiciously employed affords, perhaps, as accurate conclusions as such calculations admit of.

Relation between Value of Money and Level of Prices

In practice it is customary to study not changes in the value of money, but changes in the level of prices, since prices are more readily available. The latter may be translated into the former by means of a simple calculation since, as already explained, they are in reciprocal relation to each other. To give a concrete example, suppose that a study of prices shows a rise of 25 per cent. in the general level during a given period. This signifies that commodities which formerly cost $1.00 will now cost on the average $1.25. This being the case, $1.00 will now purchase only four-fifths as much as it would before, or its value will have fallen one-fifth or 20 per cent.

Price Statistics

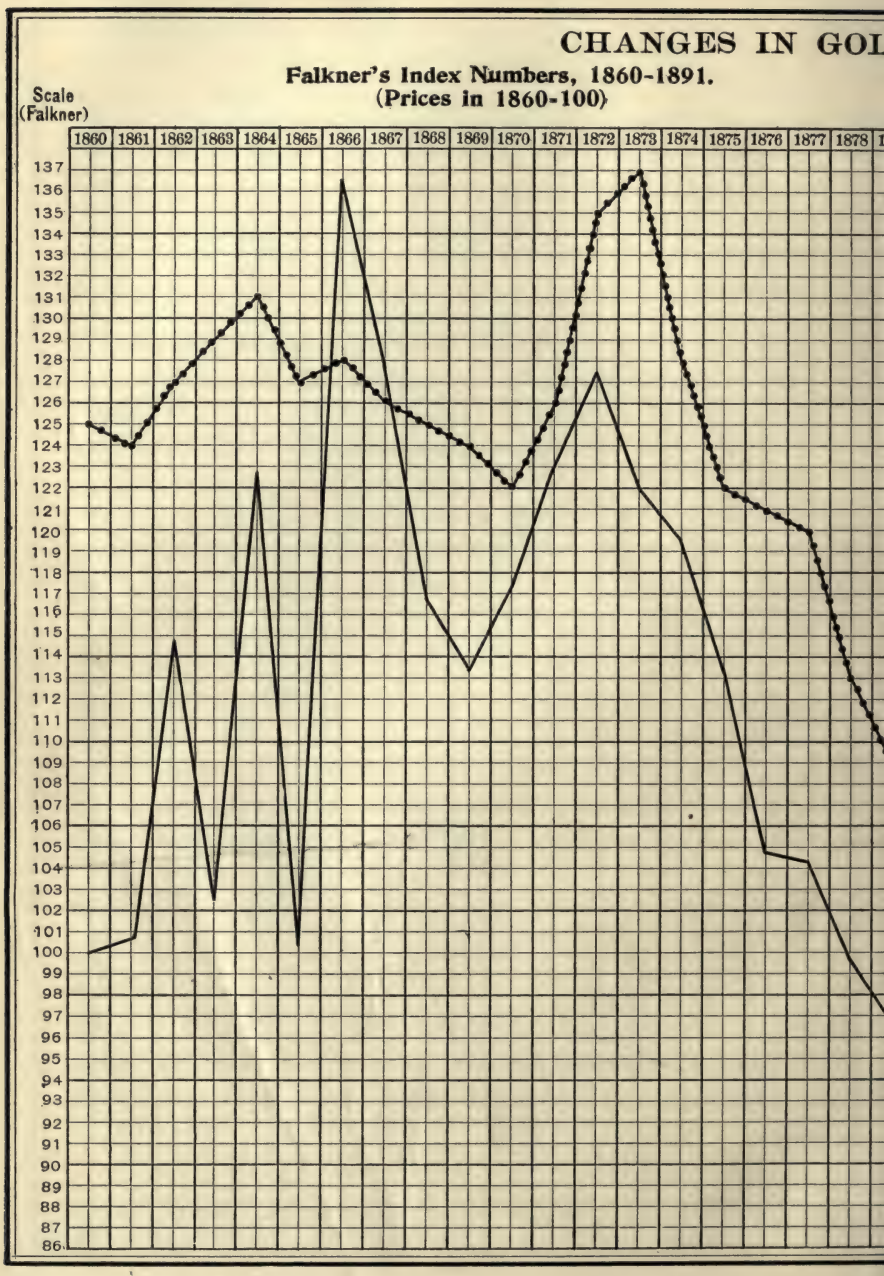
§ 200. During the last fifty years several elaborate investigations have been made designed to show changes in the general level of prices. For purpose of illustration the conclusions arrived at by two investigators, Mr. Sauerbeck, whose figures refer to English prices, and Professor Falkner, whose data were American prices, are represented in the accompanying chart. Mr. Sauerbeck's inquiry embraces 45 principal commodities and Professor Falkner's 223. Wholesale prices

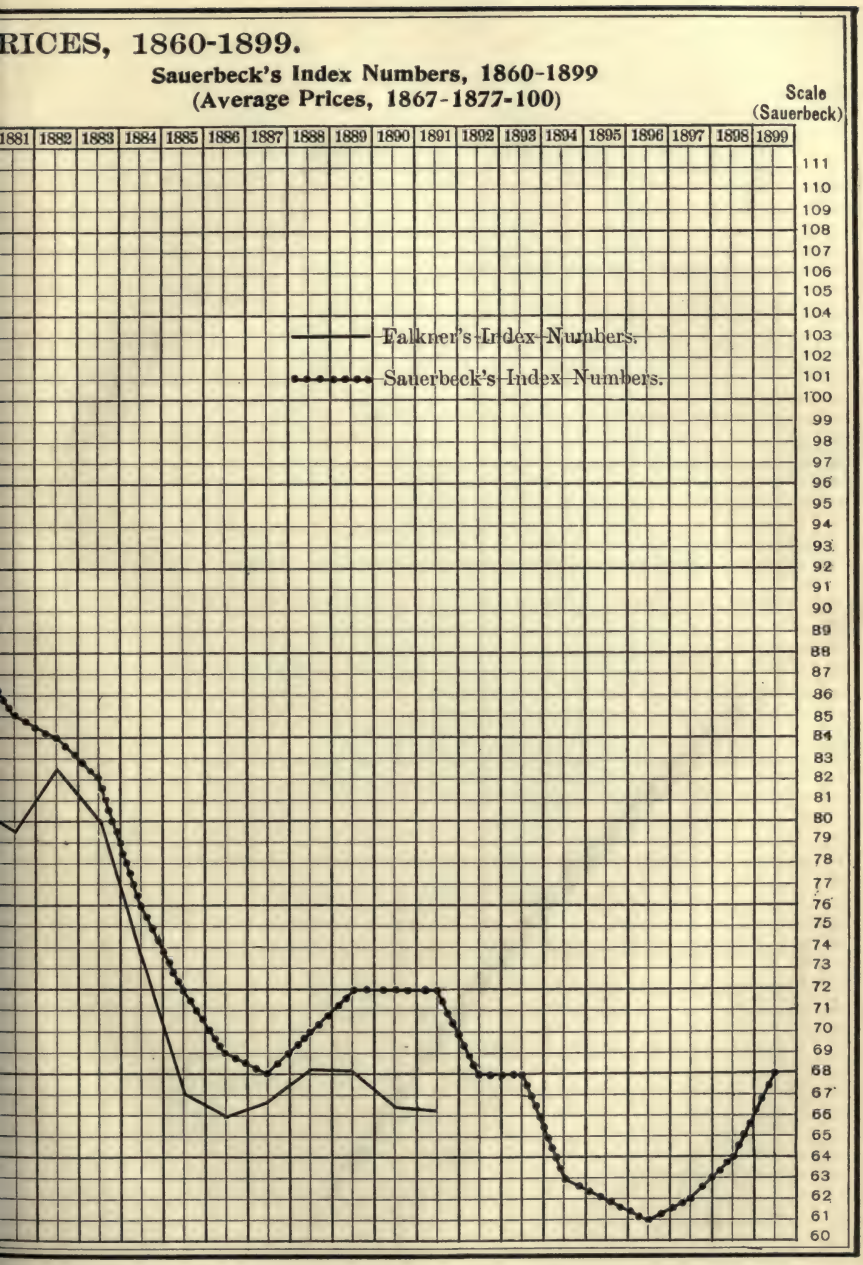
were used in both cases and the method employed was that of simple averages.*

Reasons for Fluctuations in Prices

A study of this chart reveals several interesting facts in reference to the movement of prices since 1860. Both investigations indicate a considerable degree of variability in prices from year to year. Thus Mr. Sauerbeck's index number fell from 105 in 1864 to 101 in 1865; from 1870 to 1871, it rose from 96 to 100, and from that to 109 in 1872; it fell from 111 to 102 from 1873 to 1874, and from that to 96 in 1875; finally it rose from 68 in 1899 to 75 in 1900. Professor Falkner's index number showed even more violent fluctuations: from 1861 to 1862 it rose from 100.6 to 114.9, only to fall back to 102.4 in 1863; the rise in 1864 to 122.4 was more than balanced by the fall in 1865 to 100.3; and this but prepared the way for a rise in 1866 to 136.3; subsequent changes were less violent, but from 1867 to 1868 it fell from 127.9 to 115.9, and from 1875 to 1876 from 113.4 to 104.8; other striking changes were the fall from 99.9 to 86.7 from 1878 to 1879, and that from 86 to 79.3 from 1883 to 1884. These sudden changes are accounted for in most cases by the variable use that was made of credit substitutes for money as media of exchange, complicated in the case of the American figures by the disturbing influence of the Civil War and of the depreciated paper currency which was the country's medium of exchange from 1861 to 1879. In times of general confidence credit plays such an important rôle in business that there is little monetary demand for gold and its value tends to fall—that is, gold prices tend to rise. Loss of confidence always causes a contraction of credit and an increased demand for standard money, which serves to enhance its value or to cause prices to fall. When the loss of confidence is general, as it was in 1873 and the years immediately following, the credit contraction is violent and the fall in prices correspondingly severe. Thus the use of credit, which in ordinary times is the source of so much benefit to the commercial world, becomes in times of disturbance the source of acute distress to all business men who have learned to depend upon it.

* Professor Falkner also used the method of weighted averages. For a full discussion of these and other calculations, see Laughlin, *Principles of Money*, Chapter VI.


CHANGES IN GOL
Falkner's Index Numbers, 1860-1891.
(Prices in 1860-100)
Scale
(Falkner)
1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878
137 136 135 134 133 132 131 130 129 128 127 126 125 124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86


RICES, 1860-1899.
Sauerbeck's Index Numbers, 1860-1899
(Average Prices, 1867-1877-100)
Scale (Sauerbeck)
1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899
Falkner's Index Numbers.
Sauerbeck's Index Numbers.
111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60

In addition to the yearly fluctuations recorded in the chart, a general movement is discernible. The general trend of prices represented by both lines is upward from 1860 to 1872 or 1873, and downward from that date until 1886 or 1887. The cause of the latter movement may with confidence be ascribed to the greatly increased monetary and reserve demand for gold during this period and the failure of production to respond in the measure that the situation demanded. The fall in prices made gold mining increasingly profitable and was checked after 1887 by the largely increased output of the world's gold mines. When the extraordinary demand for gold due to the adoption of the gold standard by different countries was satisfied, prices began to rise, that is, the value of gold began to fall, and this has been the general trend since 1896 or 1897.

The General Trend of Prices

It would be unsafe to base any exact conclusions upon the price fluctuations indicated by the chart, because neither one of the investigations whose results it records is free from errors. In fact it is doubtful whether the statistical method has yet been perfected to a point which makes the exact measurement of the general level of prices, or the value of money, possible. All that is claimed for these investigations is that they reflect those general tendencies which were so marked as to overcome any possible margin of error in the calculations themselves.

Statistics Not Exact

§ 201. The adoption of the single gold standard was vigorously opposed not only in the United States, but in European countries, on the ground that the supply of gold was inadequate to satisfy the needs of all nations. It was long contended, and is still by many thoughtful persons, that a much better monetary system for the world would be one which combined both gold and silver. Some countries, like England and her colonies, which had long had the gold standard might continue on that basis. Others, like Mexico and China, which were accustomed to silver only, might maintain the silver standard. The best interests of all would be served, it was thought, if the remaining countries which used both gold and silver could agree upon some scheme of "international bimetallism" which would establish a fixed value ratio between gold and silver and insure their continued use as the standard money materials of the world.

International Bimetallism

The Time for it Probably Passed

For a time it seemed as though the fears of bimetallists in reference to the insufficiency of the gold supply were well grounded. Gold prices did, as we have seen, fall with alarming persistency, and the effect of the steady decline on the temper of the business community was decidedly unfavourable. If the suggested remedy could have been applied in 1873, the results might have been generally beneficial. Nothing was done, however, notwithstanding repeated international conferences, and after 1896, when gold prices began to rise again, the principal reason for action was removed. At present it is the general consensus of opinion that "international bimetallism," even if economically and politically practicable, is no longer needed and that any international agreement that is made should have for its object the extension of the gold standard to the few countries that are still on silver and paper bases, with a view to giving greater stability to foreign exchange relations. In other words, gold has been accepted as the standard of value of the world, and the monetary problem of contemporary interest is how to extend this standard to countries which for special reasons do not care to make gold coin, even on a limited scale, their medium of exchange. The Government of India has solved this problem by acquiring a sufficient gold reserve to permit the sale at a fixed price in silver of English exchange, which represents gold, and by having the mint issue silver coins in exchange for gold on demand. By these means the convertibility of silver coin into gold at a fixed ratio is constantly maintained, and there seems no reason why a similar policy might not be adopted, by means perhaps of international agreement, by other countries preferring silver or paper as their media of exchange.

The Silver Question in the United States

§ 202. In the United States the agitation for bimetallism assumed a more radical form than in Europe, the demand being made that the country embark alone upon the attempt to maintain a constant value ratio beween gold and silver by throwing its mints open to the free coinage of the latter metal at the mint ratio of 16 to 1. This was made the dominant issue in the presidential campaign of 1896, when the Republicans opposed to the Democratic declaration in favour of free coinage a somewhat vague endorsement of

international bimetallism. Again in 1900 free coinage was an issue, but already the reasons for the agitation had been withdrawn and there seems little likelihood of a revival of the question, at least in the same form. So fast has history been made in this field that what was but yesterday a burning political issue is now a question of merely academic interest. It seems worth while, nevertheless, to consider very briefly the probable consequences of the free coinage of silver, should such a policy be adopted.

The Probable Consequences of the Free Coinage of Silver

Since present credit relations are based on the gold standard, there can be no doubt that the first effect of the proposed policy would be a credit panic of unprecedented proportions. Fear that credit obligations would be met in depreciated money would cause all who have demand claims against others, to present them. Bank depositors would besiege the institutions to which they had entrusted their savings and the latter would be forced to suspend payments. At the same time every intelligent possessor of gold would decline to use it as money in the anticipation that it would go to a premium, and bankers and bullion brokers who did not have gold would hasten to secure it from the United States Treasury by presenting United States notes for redemption. Should the Government decline to pay out gold for its demand notes, gold would at once go to a premium. Should it pursue the other course, its gold reserve would soon be exhausted and the situation would then be beyond its control. Meantime the offer to convert silver bullion, worth at the outset less than fifty cents in gold, into dollars every whit as good as gold coin, would cause streams of silver to pour towards the United States mints from every quarter. The immediate effect of the policy would be to enhance the gold price of silver. Whether this enhancement would be sufficient to alter the present commercial ratio of 1 to 32+ to the mint ratio of 1 to 16 and hold it there, is the crux of the whole question. On this point opinions differ widely, and there is no way of deciding the issue because only experience could demonstrate how large a part of the world's stock of silver would be converted into coin on such favourable terms by its present holders. Doubtless there is much truth in the contention of bimetallists that the greater part of the silver in existence has already been

enhanced in value by the art of silversmiths more than it would be by the new coinage policy of the United States, and that it would not occur to the owners of such silver to convert it into bullion even if the gold price of the latter was trebled instead of doubled. On the other hand, it is equally certain that a very large amount of silver is preserved in forms that add little to the value of their bullion contents. When it is recalled that the total gold monetary stock of the United States ($1,250,000,000) could be replaced by silver in less than six years if the entire product of the world's mines were coined into dollars, and when it is considered what a stimulus silver mining would receive if the gold price of the metal were suddenly doubled, it must appear doubtful if the mint ratio could even temporarily be made the world's commercial ratio and even more doubtful if this relation could be maintained. In the opinion of the writer, probability, so strong as to amount almost to certainty, points to the conclusion that the free coinage of silver would mean for the United States the single silver standard and a dollar worth considerably less than the present gold dollar. If this view is correct, arguments based on the alleged advantages of bimetallism have little bearing on the silver issue as it has presented itself in the United States. The alternative was between the gold standard and the silver standard, and events have already shown the wisdom of the decision arrived at in the summer of 1896, to adhere to the former.

The Future of the Gold Standard

§ 203. The future of the gold standard hinges upon the questions whether the value of gold is likely to show a fair degree of stability in coming years, and whether any more stable standard which is equally convenient in other respects is attainable.

As to the first point, present indications are believed to be very favourable. The transition to the gold standard has been accomplished, or is in a fair way to be accomplished in the near future, for the whole commercial world. Under these circumstances there is every reason to anticipate only that gradual increase in the world's demand for gold that will result from the gradual growth of the world's wealth and expansion of its exchange transactions. On the side of supply, production in the near future promises not only to be ample, but to be governed more exactly by the normal cost of production than it

ever has been in the past. Discoveries of new sources of supply and inventions affecting methods of mining and refining have, during the last ten years, advanced gold production in many parts of the world to the precision of a manufacturing industry. In quartz mining in the Rand district in South Africa and in placer mining in the low-grade gold-bearing soils, which it is now profitable to treat by means of expensive hydraulic appliances, the cost of production of gold can be accurately estimated and the output can be increased or decreased on a considerable scale as changes in the value of the product make either course desirable. Thus the normal cost of production promises to be the regulator of the value of gold in the future, as it has been of other freely reproducible goods in the past. This normal cost of production may not change at exactly the same rate as does the normal cost of producing commodities generally, but there seems to be good reason for believing that, in any case, it will change but gradually and that a fair degree of stability of value will consequently be maintained.

The Multiple Standard

§ 204. Those who believe that the gold standard will one day be superseded base their faith, not on any alleged advantage of some other commodity standard of value, but upon dissatisfaction with all commodity standards. Perfect stability of value is certainly unattainable along this line. The remedy suggested is the adoption of an immaterial standard, called the "multiple standard," whose value may be kept uniform by artificial regulation. The plan is somewhat as follows: Since the value of the monetary unit is determined by the relation between demand and supply, and since paper money is the medium of exchange preferred in the most advanced countries, let each Government take upon itself the regulation of its monetary system and substitute fiat for self-regulating money. Let a special department of issue and redemption be created to adjust the supply of such money to the demand for it in such a way that the general level of prices shall be kept uniform from month to month and year to year. This may be done, it is suggested, by issuing additional legal-tender paper notes as prices tend to fall and withdrawing such notes—perhaps by the sale of low interest-bearing bonds—as prices rise. The

measurement of prices might be made by means of index numbers in some such way as was described in a previous section and the effort would be to keep the index number constantly at 100.

Space will not permit discussion of the possibilities of a fiat, multiple-standard monetary system. There is, perhaps, no good theoretical reason for maintaining that such a system could not work in a world that was politically and commercially ready for it. On the other hand, no extended argument is necessary to show that at the present time the plan must be dismissed as impracticable, especially as there are grounds for doubting whether it would prove, in operation, as satisfactory as the single gold standard promises to be for the immediate future.

REFERENCES FOR COLLATERAL READING

The influences which determine the value of money are discussed with admirable clearness in **J. F. Johnson's* Synopsis of Lectures on Finance (Lectures II.–VI.). With this should be compared the chapters on "The Quantity Theory" in *Laughlin's* Principles of Money, and *Scott's* Money and Banking, in which contrary views are expressed. The most exhaustive discussion of the Measurement of General Exchange Value is in the work bearing that title by *Walsh*. See also, **Jevons*, Studies in Currency and Finance, and *Falkner*, Report of Finance Committee of the Senate on Wholesale Prices (1893). References for other topics considered in the chapter are: **Taussig*, Silver Situation in the United States; **Walker*, International Bimetallism; *Darwin*, Bimetallism; *Sound Currency Redbook (published by Committee of New York Reform Club); *Russell*, International Monetary Conferences.

CHAPTER XX

FOREIGN EXCHANGE AND THE TARIFF QUESTION

The Nature of Foreign Exchange

§ 205. In foreign as well as domestic trade credit now serves as the principal medium of exchange. Those who purchase goods from abroad pay for them by buying drafts, or post-office, express, or cable money orders and sending the latter to the foreign seller, or by permitting the foreign seller to draw on them by means of drafts, or bills of exchange, for the sums due. Orders for the payment of money in a foreign country are called "foreign exchange," and the buying and selling of such exchange is, as already suggested, an important part of the business of a modern city bank. A description of the factors that enter into this business as it is conducted between the United States and the United Kingdom will serve to introduce a discussion of some of its more general aspects.

Anglo-American Trade

Anglo-American trade now includes as varied transactions as the trade between different sections of either country. In addition to commodities, stocks, bonds, and other securities are constantly dealt in between the two countries; profits, rents, interest, and even wages are transmitted; freight charges are paid; travellers abroad receive remittances from home, and finally bankers' loans are exchanged. If these different transactions be looked at from the point of view of one of the countries, say, of the United States, they arrange themselves under two heads: those involving payments to the country and those involving payments by the country. The first may be thought of as credits acquired by the United States. These arise from sales of commodities or securities, from payments in the way of profits, rents, interest, or wages due to Americans from the United Kingdom, from the expenditures of Englishmen in the United States, and finally from loans by English to American bankers. The second may be described as debts, and arise from the opposite transactions, *e. g.*, purchases of commodities or securities, loans to English bankers, etc.

Sterling Exchange

For reasons which need not be enlarged upon, the custom has arisen of making London the clearing house for the credit instruments used in connection with foreign trade. Americans having payments to make in England usually buy drafts payable in London and transmit them to their creditors. Americans who are creditors of Englishmen, on the other hand, usually draw drafts or bills of exchange, payable in London, upon their debtors, in preference to waiting for the latter to remit. They sell these to bankers, who send them to their correspondents in London for collection. Orders for money payable in London are known as "sterling exchange" because they call for pounds sterling. If the orders for payments to English creditors are exactly offset by the orders for payments by English debtors, the credit instruments which arise in connection with the various transactions described will just balance each other when they come together in London and no other medium of exchange than credit will be required. This outcome, where transactions are so vast, is, of course, very unusual. It more frequently happens that there is a balance either on the credit or on the debit side to be liquidated by means of some further transaction.

The Gold Points

§ 206. The price which American bankers ask for sterling exchange varies about \$4.86⅔ per pound sterling, which is the equivalent in the gold coinage system of the United States of the pound sterling in the gold coinage system of the United Kingdom.* In consequence of the system of free and gratuitous coinage in each country, \$4.86⅔ in American gold coin is worth (approximately) a pound sterling in the United Kingdom, while a sovereign of full weight is worth \$4.86⅔ in the United States. The price of sterling exchange never departs far from \$4.86⅔, which we may call "par," for the simple reason that one alternative to employing sterling exchange as a means of payment is to ship gold, and this becomes profitable as soon as the price or rate departs from par sufficiently to cover the expense of shipment, which is now less than three cents a pound sterling, including freight and insurance. When

* The sovereign (the gold coin corresponding to the pound) contains 113.001 grains of pure gold. Dividing this by 23.22, the gold contents of the American dollar, we get \$4.86⅔.

the price rises above $4.86⅔ by three cents it becomes cheaper to remit bullion to London than to pay the premium. In practice, business men do not have to bother to remit, because competition between international bankers and bullion brokers causes gold to go out in anticipation of the high premium and the latter are willing to sell exchange, based on the bullion shipped, for such a small margin of profit, that shipments in small lots never pay. If the price of sterling fall below $4.86⅔ by three cents, it is more profitable for those having credit balances due in London to import the bullion for which these call. Competition among bullion brokers again insures a constant demand for good bills calling for payment in London at a minimum price of three cents below par, and relieves other business men of the trouble of importing gold. The limiting prices between which sterling exchange fluctuates are known among bullion brokers as the "gold points," the lower price resulting always in the shipment of gold to the United States, the upper in its shipment from the United States.

The Rate of Sterling Exchange

§ 207. The rate of sterling exchange is determined from day to day by the relation between the demand for it and its supply. All of the transactions which have been enumerated as belonging on the debit side, from the point of view of the United States, give rise to a demand for sterling. The supply comes from the transactions enumerated on the credit side. International bankers and others who buy and sell foreign exchange try to adjust the rate so that the demand and supply will just offset each other. Excess on the side of supply causes the rate to fall, the limit being the lower gold point, at which credit is abandoned as a medium of exchange and gold is used instead. Excess on the side of demand causes the rate to rise, the limit here being the upper gold point, at which credit again is discarded and gold used. Gold thus serves as the medium in which international balances are settled when debits and credits do not exactly offset each other.

The Rate of Interest and Foreign Exchange

Among the transactions which give rise to debits and credits the most sensitive are those we have characterised as bankers' loans. Anglo-American banking houses, of which there are many, divide their banking capital between London and New York. Self-interest leads them to keep the major part of this

capital and of their entire loanable funds at that centre in which the higher rate of interest prevails. Suppose that for a time this centre happens to be New York—as it usually is. To take advantage of the high rate, bankers will wish to transfer their funds from London to the more profitable loan market. They will do this most cheaply by selling drafts on London so long as they can get a price for these drafts above the lower gold point. A rising rate of interest in New York thus serves to attract loanable funds from abroad, and these add to the supply of sterling bills. This cause may serve to add so largely to the supply that the rate of exchange is forced down to the lower gold point and a part of the transfer is effected by means of a shipment of gold. In fact, the Bank of England and the state banks of other countries which are in a position to control the bank rate of interest commonly secure gold when they want it by raising their rates of discount until the rate of exchange is brought to the gold import point.

Prices of Stocks and Foreign Exchange

A rising rate of interest in New York tends to add in still another way to the supply of sterling bills. An important item in the loan business of New York banks is loans to speculators and stock-brokers who invest the sums borrowed in stocks and bonds in the expectation of selling them at a profit. As the rate of interest rises the prospect of profit from purchasing securities with borrowed money is reduced. This lessens the demand for such securities, and thus tends to lower the prices at which they sell. One probable effect of lower prices for securities is increased purchases on foreign account, and all such purchases, of course, add to the supply of sterling bills.

Prices of Commodities and Foreign Exchange

More important in their aggregate effect, although less sensitive to temporary fluctuations in the rate of interest, are changes in the prices of the commodities that enter into foreign trade. Falling prices in the United States attract foreign buyers and their purchases add to the supply of sterling bills. Rising prices not only discourage foreign purchases, but stimulate purchases from abroad on the part of Americans, thus adding to the demand for bills. The three influences mentioned—changes in bank rates of interest, changes in the prices of securities, and changes in the prices of commodities—are not the only ones that affect demand and supply in rela-

tion to sterling exchange, but they are so much more important than any others that the latter may be neglected.

Ways of Quoting Foreign Exchange

§ 208. The preceding discussion referring to sterling exchange applies also to French, German, or any other species of foreign exchange in which the United States happens to be interested. There is, however, one circumstance that deserves notice because it is apt to cause confusion. The rate for foreign exchange between two countries may properly be quoted in terms of the currency of either. English or sterling exchange is habitually quoted in terms of American money. French exchange, on the contrary, is usually quoted in New York in terms of French money, that is, the number of francs and centimes corresponding to an American dollar. Sterling exchange, as we have seen, is high or dear in the United States when it is above par and low or cheap when it is below par. French exchange, because quoted in French money, is high or dear when below par and low or cheap when above par. As French exchange rises the dollar becomes worth more francs or an order for francs in Paris becomes cheaper. Conversely, as it falls, an order for francs becomes dearer. It follows that whereas sterling exchange *rises* towards the point which makes the exportation of gold profitable, French exchange *falls* towards that point and *vice versa.* In London, American exchange is usually quoted in American money, that is, as sterling exchange. Consequently, from the English point of view a high rate for sterling means cheap exchange and the prospect of gold importation, or just the reverse of what it means from the American point of view.

Three-cornered Exchanges

It is important to remember this complication in practice, because the transactions of a country in different kinds of foreign exchange are intimately related. Credit is so much more economical than bullion as a medium of exchange that the latter is only shipped after all of the resources of credit have been exhausted. In the case of the United States some branches of its trade, as, for example, its trade with Brazil, call habitually for payments that are not offset by credits acquired in that country by Americans. Nevertheless, bullion is rarely shipped from the United States to Brazil, because it is quite as satisfactory to Brazilian bankers to receive sterling bills which add to

their credits in London, and on the basis of which they can sell drafts to Brazilian importers from Europe. Thus a three-cornered exchange of credit instruments serves to adjust balances, which would otherwise necessitate the shipment of gold back and forth across the Atlantic.

Exchanges between Gold and Silver Standard Countries

Another complication arises in connection with foreign exchange when the monetary systems of the countries considered are not based on the same standard. Between the United States with its gold standard, and Mexico with its silver, or the Argentine Republic with its paper standard, there is no fixed par of exchange. The general principles regulating rates of exchange are the same in such cases as for two countries with the gold standard, but the range within which such rates may fluctuate admits of no precise definition. This is an inconvenience that will be avoided only when the gold standard has been universally adopted.

A Country's Gold Supply Regulates Itself

§ 209. The importation or exportation of gold, which is the resort to which international bankers must have recourse when foreign credits and debits can be balanced by no cheaper means, causes a continuous redistribution of the world's supply of that metal. The last and most important point to note in the theory of foreign exchange is that this distribution is self-regulating and always gives to each country that proportionate share of gold which is needed to keep its rate of interest and level of prices in their normal relation to those of other countries. Suppose the cause of the movement of gold from one country to another is a rising bank rate of interest in the latter. As gold pours in and is added to bank reserves it will tend to check such a rise, and meantime bank rates abroad, where bank reserves have been depleted, will tend to rise to re-establish the normal relation. If the cause of the higher rate in the gold-importing country was some temporary demand for bank loans, bankers will find their reserves too large when the emergency has passed, and will lower their rate of interest to attract borrowers. Before this process has gone far, an exportation of gold will be likely to set in to re-establish the balance. Suppose, again, that the importation of gold has been induced by the low prices at which commodities are being sold in the importing country. Such importation will before long itself

cause prices to rise, there being more money to serve as a medium of exchange than before, while the withdrawal of gold from other countries will in time cause their prices to fall. These results will follow the more promptly because ordinarily the new gold will find its way into bank reserves and will add to the use of credit as a medium of exchange much more largely than it adds to the country's supply of standard money. In the same way its exportation will serve ordinarily to reduce bank reserves and to cause a contraction of credit that will lessen the supply of media of exchange by much more than the amount of gold lost. By these means the movement of gold in one direction is soon checked with every likelihood that a counter movement will follow, unless the new distribution proves permanently satisfactory because of some increased need on the part of the importing country.

The United States Should Normally Export Gold

It follows from the above considerations that the importation or exportation of gold is not a matter of any special importance either to the business community or to the government unless a country's monetary system is in an unsound condition. If gold is leaving a country, as it left the United States in 1893, because its place is being taken by an excessive issue of credit money, grave uneasiness may well be felt. If, on the other hand, it is being imported because of a violent contraction of credit that has suddenly increased the demand for legal money as a means of payment, there is again ground for anxiety. Experience of movements of gold excited by causes like these has led American business men to attach exaggerated importance to this phenomenon even when the reasons for it are perfectly normal. There is widespread belief, inherited from the mercantilists of the eighteenth century, that to gain gold is an advantage and to lose it a disaster. Even in countries which produce no gold themselves there is no basis for this belief. They can count confidently on retaining their proportionate share of the world's gold so long as their money and credit systems are sound. For a country like the United States, which contributes each year more than one-fourth of the total addition to the world's gold supply, the belief is just the reverse of the fact. The normal condition for the United States is to export a part of its gold, as it exports part of its

cotton or wheat. If it fails to do so, the cause is likely to be found in some defect in the credit or monetary system which compels the country to retain more gold than is economical or desirable.

Foreign and Domestic Trade Compared

§ 210. The difference between foreign and domestic trade is a difference of degree only. It happens that the continent of Europe is divided up between more than a dozen different sovereignties, and this causes trade between its different sections to be largely foreign. On the continent of North America, on the other hand, it happens that only three sovereignties are represented. Of these the United States alone controls an area nearly as large as the continent of Europe and presenting equally striking diversities of soil and climate. Trade between different sections of the United States is domestic, and yet the same considerations which, for example, cause California to produce oranges, lemons, and olives for the rest of the country, cause Italy to produce the same things for the rest of Europe. In both instances trade results from the efforts of men to realise the economies connected with a territorial division of labour, that is, to devote each particular area to those products for which it is best adapted, while securing from other areas by means of exchange their special products.

Peculiarities of Foreign Trade

Although foreign and domestic trade are thus controlled at bottom by identical principles, economists are in the habit of singling out the former for special treatment, partly because it is frequently subjected to regulations from which the latter is exempt, and partly because back of these regulations are differences in race, nationality, and political ideals which play their part in shaping economic conduct. One effect of the latter has already been noted, that is, the unreadiness of workmen to give up home and country for the sake of the higher earnings that may be obtained in other places. In consequence of this "immobility of labour," differences in wages between different countries persist generation after generation and play their part in shaping foreign trade. Differences in interest rates traceable to the immobility of capital, although less marked, are not without their influence also.

The guiding principle which controls foreign trade is summed up in the statement that each country produces for

export those things which it can produce most cheaply, and imports in exchange those things which other countries can produce most cheaply. In the absence of trade restrictions, the capital and labour force of each country tends to be assigned to those branches of production for which it has the greatest natural or acquired aptitude. The selection is not determined absolutely, but by comparative standards. That is, one country may have an absolute advantage over other countries for the production of hundreds of different commodities, but its interest and wage rates may be so much higher—in consequence of these very advantages—than those of the latter that it can produce more cheaply than they only the score or more of these commodities in which its superiority is most pronounced.

Other countries also must find employment for their capital and labour and by submitting to lower interest and wage rates will be able to produce some commodities more cheaply, even though with greater expenditure of time and effort, than the superior country. An illustration of the way in which a country may produce for export commodities which it cannot produce as easily as the importing country is afforded by the trade between the United States and Germany. The former imports from the latter cutlery, beet sugar, and several other commodities which it could produce with less effort than their production in Germany costs. Such trade is, nevertheless, mutually advantageous, because on the side of Germany it permits a utilisation of capital and labour which yields larger returns in wheat, salt meat, and the other goods that are imported from the United States than could be secured by the direct production of these things, while on the side of the United States it enables the country to secure the commodities imported in exchange for wheat, salt meat, etc., with less expenditure of effort than would be involved in their production. The situation of a country is not unlike that of an individual. It has a limited force of labour and capital to employ and secures the largest return by concentrating these where they are most effective. Just as it does not pay a successful lawyer to do his own typewriting, no matter how expert a typewriter he may be, so it does not pay a country to do many things it could do more

easily than its neighbours, because there are other things it can do still more easily and that, therefore, pay better.

The Policy of Protection

§ 211. As already stated, most countries subject their foreign trade to restrictions from which their domestic trade is exempt. This policy is called "protection," as its principal purpose is to protect home producers from foreign competition in the home market. How this may be accomplished by prohibiting or taxing the importation of commodities that may be produced at home is obvious. As a preparation for discussing the arguments in favour of such restrictions we may profitably recall the advantages that are claimed for free trade.

The Advantages of Free Trade

As pointed out in the preceding section, the chief purpose of foreign, as of domestic, trade is to render possible the division of labour and the economies connected with it. That this purpose will be most fully realised in connection with domestic trade, if free exchange is permitted, is generally conceded. Under such circumstances each individual will tend to devote his labour and capital to that pursuit for which he is best fitted and will obtain from other specialists, through exchange, the varied products he requires. Obstacles to free exchange prevent the full realisation of this division of labour by limiting the market for the products of specialists and thus compelling them to produce for themselves, or go without, some of the things they might otherwise obtain by exchange. But the same reasons that make free exchange within a country advantageous may be urged in favour of free trade between countries. Political boundaries do not alter the essential facts that trade is at bottom an exchange of goods for goods in which both parties are gainers, and that the freer the conditions of exchange the more highly will the division of labour be developed. Differences in the productive capacities of different countries fit some to produce some things, others others. If free trade is permitted, each will tend to produce only those things for which it is best adapted and to rely upon other countries for the other things desired and in the production of which the latter have a relative advantage. The consequence will be a larger joint produce and a larger share of wealth for each country than it could secure if compelled to produce for itself all of the things that its inhabitants require. If restrictions on trade are to be

approved, it must be because they accomplish results that compensate a country for the undoubted losses which they entail.

History of Protection in the United States

§ 212. Some of the strongest arguments in favour of protection apply to countries only at particular stages of their industrial development. For this reason and because it has been the policy of the country almost since the beginning of its history, it will be profitable to discuss the subject of protection as it has gradually unfolded with the growth of the United States. In Chapter II., Section 13, attention was called to the connection between the ideal of national economic independence and the protective features in the first United States tariff (1789). During the period of trade restriction which preceded and accompained the war of 1812, this ideal was so far realised that other arguments for protection began to be advanced. The Tariff Act of 1816, the first highly protective tariff that the country had known, was defended more on the ground of protecting industries already established than of building up new industries. In fact, the highest duties provided were to remain in force only three years, as it was believed that by that time American manufacturers would be adjusted to the conditions of peace and able to hold their own against foreign competitors. The erroneousness of this view was soon demonstrated and succeeding tariffs continued the protective policy, although with modifications, down to 1857. During this period the "vested-interests argument," the "home-market argument," and the "infant-industry argument" were those most frequently urged in support of protection.*

The vested-interests plea needs no explanation. It is always urged by conservative people in favour of the continuance of an established policy, but does not pretend to throw any light upon the merits of a policy in itself.

The Home-market Argument

The home-market argument, as advanced by Henry Clay, the "father of the American System," as protection began to be called, was designed to reconcile the interests of the agricultural South and West with those of the manufacturing North. It rested upon the proposition that the prosperity of the Ameri-

*The material for this section and that which follows has been drawn largely from the author's article on *Protection*, in the New International Encyclopedia.

can farmer depends upon a regular and constant market for his products, and that such a market is to be obtained only by building up manufacturing centres within the country. The experience of the years from 1816 to 1825 was cited to prove that the foreign market is not to be depended upon and farmers were exhorted to unite with manufacturers to establish a system which should bind different sections of the country together by furthering the interests of all. To the greater stability claimed for the home market—a quality now seriously questioned by economists—later analysis has added another merit. The home market calls not only for the staple products which will bear ocean transportation, but also for all kinds of perishable goods. Substituting it for the foreign market renders possible diversified farming and enables cultivators to substitute for exhausting, one-crop systems of agriculture, rotations of crops which serve to preserve and perpetuate the fertile properties of the soil. This advantage is believed by protectionists to outweigh the admitted losses incidental to the protective policy and to insure in the long run a greater degree of prosperity than will result from the free play of economic forces.

The Infant-industry Argument

The infant-industry argument is the one to which economists usually concede greatest weight. It is urged in both a special and a general form. As it applies to special industries it rests on a recognition of the risks and difficulties which attend the domestication of new branches of production. In the successful prosecution of any industry three factors co-operate: the requisite natural resources, skilled and unskilled workmen of different grades, and the appropriate forms of capital. As regards each one of these, the country which has practised an industry has a marked advantage over the country which has not. The natural resources of the latter may be superior, but they are undeveloped; its labour force may be ample and adaptable, but it is untrained; its people may be competent to use tools and machines, but they have no familiarity with the special forms of capital needed. Under such circumstances the encouragement of a protective tariff may suffice to induce investors to establish the new industry when without it they would not venture on such a step. After a few years, if the industry to

be domesticated has been wisely chosen, the initial difficulties will have been surmounted and the protective duty may be withdrawn without detriment to the now vigorous infant. Advocates of such a policy recognise quite clearly that resort to protection entails a burden on consumers. They justify the temporary loss on the ground that the establishment of the new industry on a permanent footing will afford in the end a more than compensating gain.

Argument of List

The infant-industry argument in its general form recognises that countries must usually pass through different stages of industrial development and advocates protection as a means of accelerating progress during periods of transition from one stage to another. The best statement of this argument is that given by Friedrich List in his *Das nationale System der politischen Oekonomie,* which appeared in 1841. The conclusions at which List arrived were based on the contrast between an industrial country like England and an agricultural country, such as Germany was at the time he wrote. In his opinion England's success as a manufacturing country was due chiefly to the development of certain industrial qualities among her people. Germany, he thought, might develop the same qualities among Germans by means of a protective policy which would force them to manufacture for themselves. Through protection the natural resources of the country necessary to the development of manufacturing would also be opened to exploitation. From this point of view protection is a temporary means by which an agricultural country may transform itself into an industrial country. After the transformation is completed the new manufacturing industries, or at least a great many of them, will be quite capable of holding their own in competition with the manufacturing industries of other countries and protection will no longer be required.

Protection in the United States since the Civil War

§ 213. The last stage in the development of the protective policy of the United States has been the outgrowth of the Civil War. That struggle involved the withdrawal from Congress of the representatives of the Southern States who had been the most active opponents of protection. Under the guidance of representatives from the North successive tariffs were passed carrying the policy to the most extreme lengths which the

country had known. Factors in this development were the anti-foreign sentiment which resulted from the somewhat hostile attitude of Europe to the cause of the North, and the comprehensive system of internal revenue taxation adopted during the War, which had to be offset by higher import duties if Americans were not to be placed at a disadvantage in competition with foreign producers. The change in the level of duties which resulted from this combination of circumstances is indicated by the fact that whereas under the Act of 1857 the *highest* duties imposed were 24 per cent. *ad valorem*,* under the Act of 1864 the *average* rate of duty on dutiable articles was over 47 per cent. During the first fifteen years after the close of the war the attention of Congress was occupied by questions of reconstruction, the resumption of specie payments, etc., and no change of importance was made in the tariff except that it became increasingly protective as the internal revenue duties were one by one removed. When attention was again concentrated upon the tariff question the protectionists were still in control of Congress. The tariffs of 1883 and 1890 were both modifications in the direction of higher duties. The Act of 1894 was a reactionary measure, but was so garbled in its passage through Congress that the tariff-reform President of the period, Mr. Cleveland, allowed it to become a law without his signature. The victory of the Republicans in 1896, although little related to the tariff issue, involved as an incident a return to a highly protective policy. In fact the Dingley Act of 1897 marks the extreme limit to which that policy has been carried in the United States.

The Wages Argument

During this last period at least one new argument of importance was advanced in support of protection, the "wages argument." Before protection became the settled policy of the country, one of the reasons urged in its favour was that, since wages were higher in the United States than abroad, some special encouragement was necessary to the introduction of new industries to enable employers to compete with the low-wage labour of Europe. After protection became a settled fact, by an

* *Ad valorem* duties, or duties based on value, are to be contrasted with *specific* duties based on quantity (*e. g.*, so much a pound or a bushel).

interesting inversion, *it* began to be given credit for the high wages of American labour. The wages argument runs as follows: In protected industries higher wages are paid in the United States than in similar industries abroad. Protection, therefore, causes high wages, and its withdrawal must tend to pauperise American labour. This overlooks certain important considerations. First, equally high wages are paid in unprotected as in protected industries, and the former, which in the United States include farming, mining, transportation, and many branches of manufacturing, vastly exceed the latter in importance and magnitude. Second, employers, whether protected or unprotected, desire to secure their labour as cheaply as they can and there is nothing in a protective tariff which forces them to pay higher wages than are current in the community in which the protected industries are located. In other words, employers in protected industries pay the wages they must to get the labour they require, and these depend not upon the protective tariff, but upon general industrial conditions. Third, it is not true that high wages and protection always go together. For example, wages in protectionist Germany are lower than in free-trade England. For these reasons the wages argument, although effective for campaign purposes, has never enjoyed much repute among trained economists.

Political Ideal of Protectionists

Even more influential than the economic arguments in favour of protection that have been reviewed, has been the ambition of American statesmen to cement the bonds which unite different sections of the country by means of a tariff which should make them mutually dependent and at the same time independent of Europe. This was to be accomplished by developing the division of labour to the highest point within the country, without giving any encouragement to the international division of labour upon which foreign trade rests. Horace Greeley, the influential editor of the New York *Tribune,* expressed this view of protection with his usual clearness in the following declaration: * " If I had my way I would put a duty of $100 a ton on pig iron, and a proportionate duty

* Interview of Horace Greeley with President Garfield (1881), quoted from Dewey's *Financial History of the United States*, p. 397.

on everything else that can be produced in America. The result would be that our people would be obliged to supply their own wants, manufactures would spring up, competition would finally reduce prices and we would live wholly within ourselves." From this point of view the chief function of protection is to serve as a Chinese wall to preserve the United States from the contamination of foreign influences. Uneconomic as such an ideal must appear, it cannot be doubted that it makes a strong appeal to many patriotic citizens. But for it tariff controversies in the United States would have had little of the moral earnestness which has characterised them whenever protection has been the issue.

The Tariff of 1897

§ 214. A brief description of the tariff of 1897, still (July 1, 1903) in force in the United States, will serve to emphasise one argument against protection—that is, its complexity. The act in which this tariff is embodied covers seventy octavo pages and enumerates upwards of 3500 different articles of which some 350 are admitted into the country free of duty and the remainder are subject to taxation. There are fourteen different schedules (lettered "A" to "N") under which dutiable articles are classified. Schedule "K," embracing "wool and manufactures of wool," is fairly typical. In it wool is divided into three elaborately distinguished classes to each of which a special duty is applied. Wools of classes one and two are taxed eleven and twelve cents a pound respectively. Wool of class three, worth less than twelve cents a pound, is taxed four cents and, worth more, seven cents a pound. The rate of taxation on the cheaper grades is thus from 33⅓ per cent. to 58 per cent. These duties are intended, of course, to protect farmers and ranchers engaged in the production of wool. To protect manufacturers of woollen goods it is necessary to compensate them for the higher prices they have to pay for protected wool as well as to protect them against foreign manufacturers. The tariff accomplishes this object by subjecting woollen goods to both a specific and an *ad valorem* duty. For example woollen yarn, if made of wool worth less than thirty cents a pound, pays a specific duty on each pound equal to two and one-half times, and, if of wool worth more, to three and one-half times, the per pound duty

on wool of the first class, and in addition an *ad valorem* duty equal to 40 per cent. Similar mixed duties apply to woollen cloths of all kinds, with the consequence that the tax on consumers of imported woollen goods is very heavy. According to the returns of the customs office for the year ending June 30, 1902, the average rate of duty on wool imported during that year was 59 per cent. and the average rate on the manufactures of wool 92 per cent. The rates on other textiles, the raw materials of which do not require protection, are of course less extreme, but the returns indicate that the average rate on imported cotton goods during the same year was 55 per cent., and on imported silk goods 54 per cent.

The Burden of Protection

The above duties on textile goods are among the highest protective duties on the list, being exceeded only by the duties on china and glass ware, which averaged 59 per cent. The general average on all dutiable articles was, however, nearly 50 per cent. in the year referred to, so that the duties cited give no exaggerated picture of the burden of taxation which results from the protective system. Nor is this burden adequately represented by the statement that consumers of imported commodities which compete with American products must pay on the average 50 per cent. more than such products are worth abroad. Much heavier is the burden which results from the exclusion of foreign products and the enhancement of the prices of American goods. The higher prices that consumers must pay for protected goods in order that they may be produced at home afford no revenue to the Government, although they add so largely to the expense of living in the United States.

Complexity of the Tariff Question

Space will not permit a description of other features of the tariff. The complexity of the wool schedule is matched in the schedules applying to the metals, to wood and manufactures of wood, to silk goods, etc. To fully master any one of these schedules and determine what rates of duty would afford adequate protection without unduly burdening consumers would require months of study of the industries affected, both at home and abroad. To fully master all of them, with the three thousand odd different articles to which they refer, is a task beyond human capacity. Needless to say, Congress in drafting

tariff bills makes no such ambitious attempt. Instead, it contents itself with taking the testimony of interested persons as to the amount of protection their businesses require, and accepts their statements as its guide in apportioning protection to different industries. The bill so prepared by the Committee of Ways and Means in the House of Representatives is submitted to a running fire of criticism and amendment in both Houses, and when finally passed is such a hodge-podge of compromises that even the most earnest advocates of protection are usually forced to express regret that a better measure could not be secured. The complexity of a protective tariff, with its thousands of items and its confusing medley of *ad valorem* and specific duties, applying often to the same commodities, is in striking contrast with a tariff for revenue only like that of the United Kingdom. The latter contains but a few items, and since it serves no special interest, except that of the Government, may be drawn up in a simple and business-like way. Its financial results can be foretold with a high degree of precision, and its capacity to yield revenue is even greater than that of the more burdensome protective tariff because it confines itself to articles that are widely consumed.

Present Status of the Tariff Question in the United States

§ 215. Arguments in favour of protection ought to be carefully weighed against the general argument in favour of free trade, not as abstract propositions, but with reference to the concrete circumstances of each particular country. The result of such a procedure applied to the present industrial situation of the United States is, in the opinion of the author, decidedly unfavourable to the claims of protectionists. National economic independence, the first and perhaps the strongest reason urged in support of protection, has long since been achieved and would not be endangered in the slightest degree by a change of trade policy. The vested-interests argument is of weight as a plea against a too hasty reduction of duties upon which important industries have come to depend, but cannot justify the indefinite continuance of such duties if they no longer serve the best interests of the whole country. The home-market argument has little application to the present situation, when such a large proportion of the staple products of the country seek the foreign consumer in defiance of the tariff and when the conse-

quence of the latter is too often tariff retaliation on the part of other countries much more unsettling in its effects than fluctuations in foreign demand, independent of hostile tariffs, could possibly be. The infant-industry argument in its special form is now applicable to but few American industries, while in its general form it has certainly been outgrown by a country whose manufactured products already compete successfully for a share of the foreign market. Finally, the wages argument inverts the true relation between protection and high wages. High wages are due, as explained in a previous chapter, to the high productiveness of labour, due, in turn, to the superior natural resources of a country, its abundant and efficient equipment of capital goods, and the capacity of its entrepreneurs and wage-earners. It is because of high wages that protection is necessary to the maintenance of certain industries in the United States. Without it goods now produced in the country would be imported and paid for by increased production in those lines of industry which need no protection. Since labour and capital are more productive in unprotected than in protected industries, the withdrawal of protection and the concentration of labour and capital in the former might be expected, time being allowed for the necessary readjustment, not to lower wages, but to raise them. Certainly more wealth would be produced under the new arrangement, and labour's chance of getting a larger share would seem as good as that of any other factor in production. Thus instead of raising wages, protection serves on the whole to lower them and is itself necessary because wages were already high before it was introduced. The case for protection thus appears on every count to be decidedly weak in comparison with the case for free trade. If the issue were to be decided solely on grounds of economic reasoning, it is believed that the policy of protection would be quickly abandoned.

The Strength of Protection

The present strength of protection in the United States rests, however, less on reasoning than on sentiment and experience. The all-important fact that cannot be argued out of the mind of the practical business man is that protection has been the policy of the country during a period of remarkable industrial prosperity. That this has been an accident he will not believe.

or at any rate he prefers to "let well enough alone," and to refrain from disturbing a system which may have had something to do with the country's undoubted progress. Under these circumstances the policy of protection is likely to be adhered to as long as prosperity continues, or until those whose interests would be directly furthered by free trade organise as effectively to oppose protection as interested manufacturers are already organised to maintain it.

Opposition to Protection to Trusts

§ 216. According to the general argument for free trade, it is the consuming public, which has to pay higher prices for protected goods, that is most injured by protection. But the consuming public constitutes no definite class and its organisation as a party of opposition is highly improbable. At certain points, however, the protective tariff of the United States is already subject to vigorous attack by particular consumers. One of these is where it acts as a shield for the combinations of manufacturers or trusts discussed in Chapter XXV. Indications are not lacking that the first breaches in the American tariff wall will be through lowered duties on trust-made goods.

Folly of Protecting Exploitation of Limited Natural Resources

Another aspect of protection that is beginning to receive merited condemnation is its tendency to hasten the destruction of limited natural resources. In the United States important branches of mining, such as coal and iron, are protected, in utter disregard of the fact that this forces the country to use up its own limited supplies of these indispensable materials when it might, in the absence of the tariff, secure at least a part of what it needs from neighbouring countries. Protection is also extended to the lumber industry, although it is notorious that the destruction of American forests is progressing at a rate that threatens grave injury even to the present generation. It seems too clear for argument that wise national policy demands the conservation rather than the destruction of limited natural resources such as those mentioned. When a revision of the present tariff is undertaken, this aspect of the subject is sure to be impressed upon Congress, and there is reason to hope that these most objectionable protective duties may be repealed.

Somewhat less direct than the burden protection imposes on consumers is the injury which it does to producers for the foreign market. They suffer in both a general and a special way.

The Burden of Protection to Producers for Export

In general, protection, by curtailing imports, curtails the foreign demand for native products, or exports. This must be the case, for in the long run imports and exports pay for each other. A country which will not take the products of other countries cannot sell to them. For a short time they may pay in specie for what they cannot pay for in goods, but as pointed out in Section 209, the exportation of gold must soon be checked automatically by changes in interest rates and price levels. Thus the policy of excluding foreign goods from the home market in order that home industries may develop to satisfy its needs, is, from the point of view of producers for export, a policy of repression rather than of protection. To the same extent that the home market is wrested from foreigners and given to protected home producers, the foreign market is wrested from unprotected home producers. The latter have good reason for complaining that discrimination in favour of industries which need protection is discrimination against them. Until recently, the industries in the United States which produced for export have been the great extractive industries. Now that manufacturers also are beginning to look to the foreign market for their customers, this adverse side of protection, to which they seem to have been blind in the past, is likely to receive its proper share of consideration.

Retaliatory Tariffs

The special grievance which producers for export urge against protection is that it antagonises foreign governments and leads to retaliatory measures. Protection is a game at which two can play and which loses much of its interest when participated in too widely. The United States has already been the object of tariff retaliation on the part of Germany and Russia, and if the temper evinced by the foreign press is any criterion, its troubles from this source are only just beginning.

The Future

The future of protection in the United States is uncertain, as must be the future of any political policy, but there seems reason to believe that the trend of events is away from, rather than towards trade restrictions. Protection, as the term implies, is a policy for the weak rather than for the strong. As the United States becomes conscious of its industrial strength it is likely to tear down its protective barriers and enter the field of free

international competition in the same confident spirit as did the United Kingdom half a century ago.

Free Trade

§ 217. Notwithstanding the strength of the arguments against protection stated in the preceding sections, it has been and still is, with few exceptions, the policy of nations. Among the exceptions the most notable is the United Kingdom, and this makes a brief account of the trade policy of that country of particular interest. As used in current discussions, "free trade" means, not perfectly free exchange between nations, but exchange restricted only by moderate revenue duties. It was such free trade that the British Parliament decided to introduce in 1846 and that was fully realised in the tariff adopted in 1860.

The Present Trade Policy of the United Kingdom

The present trade policy of the United Kingdom may be summed up in the following propositions: (1) No restrictions whatever are imposed upon exports, except a temporary war revenue duty of one shilling a ton on coal; (2) import duties are imposed only on the following articles, all others being admitted free, viz., cocoa, coffee, chicory, dried fruit, tea, tobacco, wine, beer, spirits, and sugar; (3) to prevent these duties from offering any special encouragement to home as distinguished from foreign producers, the production in the United Kingdom of such of the articles as might be there produced is either prohibited, as in the case of tobacco, or subjected to exactly equivalent internal revenue duties, as in the case of beer and spirits. The policy thus opposes no obstacle to the prosecution within the United Kingdom of those industries for which the country is adapted, while it affords to home producers no advantages over their foreign competitors in production for the home market except those which nearness to that market and better acquaintance with its requirements always give.

The Free Trade Movement, 1860–1870

§ 218. For a time, after the United Kingdom adopted a free-trade policy, it seemed as though other European states would follow her example. France entered into a series of commercial treaties, beginning with the Anglo-French treaty of 1860, which made her trade policy exceedingly liberal. Meantime the *Zollverein,* or tariff union, which had been organised by the states of Northern and Central Germany from 1831 to 1835, was moving, under the leadership of Prussia, in the direction of a tariff for revenue only.

The national animosities which grew out of the Franco-Prussian War (1870-71) checked the liberal movement, and the latest changes in European tariffs have been decidedly away from free trade. The reaction in Germany was signalised by the enactment of the moderately protective tariff of 1879. The French tariff of 1881, which substituted specific for *ad valorem* duties, was also moderately protective in its tendencies. Subsequent tariffs, notably that of France, adopted in 1892, and that of Germany, adopted in 1902, advanced the policy of protection to more extreme lengths in both countries, and are fairly typical of the tariff legislation of European nations generally during recent years. Only Belgium and Holland have held aloof from the movement towards protection, and even by them free trade is not realised to the same extent that it is by the United Kingdom. The Protectionist Reaction

The war of protective tariffs which is now in progress in Europe is doing more than could any amount of argument to discredit that policy. Statesmen in all countries are beginning to appreciate that however advantageous protection might be if one country could practise it all by itself, it is suicidal when pursued to its logical limit, that is, the entire exclusion of all products that may be produced at home, by all countries together. The United States, with its varied natural resources, may pursue such a policy and prosper, but this is not possible for one of the countries of Europe. It may take time for this conviction to win general assent, but that it is gaining ground is evinced by the agitation for enlarging the boundaries of the protected areas. Tariff unions similar to the German *Zollverein* are now being considered on the one hand for the whole continent of Europe, and on the other for the whole British empire. That such unions will be formed is highly improbable, but that the same arguments that are urged in their favour may be advanced with even more cogency in support of a policy of general free trade must be admitted by all who have followed the tariff controversy. The Present Outlook Abroad

REFERENCES FOR COLLATERAL READING

Scott, Money and Banking, Chap. XII.; ***Goschen***, The Theory of the Foreign Exchanges; ****Clare***, The A B C of the Foreign Exchanges;

**Pierson*, Principles of Economics, Part II., Chap. III.; **Bastable*, The Theory of International Trade; *Fawcett*, Free Trade and Protection; *Sumner*, Lectures on the History of Protectionism in the United States; **Patten*, The Economic Basis of Protection; *Thompson*, Protection of Home Industry; **Taussig*, Tariff History of the United States, and State Papers and Speeches on the Tariff; *Stanwood*, American Tariff Controversies in the Nineteenth Century.

CHAPTER XXI

THE LABOUR MOVEMENT

Obstacles to Free Competition in the Labour Market

§ 219. The treatment of wages in the chapter on that topic was open to the charge of being unduly abstract. The assumption that competition has free play between workmen and employers involves a disregard of palpable facts and must, for many readers, have weakened the force of the conclusion that under such circumstances workmen of the same grades of capacity tend to secure the same rates of wages in each labour market and that in general these rates tend to be the shares of the joint product that are economically imputable to labour as distinguished from the other factors in production. We must now give full weight to the undoubted fact that competition in the labour markets of the world is not free and all-sided, as assumed, but obstructed in various ways, and consider how this modifies our conclusions in reference to the relation between work and pay.

The Disadvantages of Wage-earners as Bargainers

The wages contract is a bargain, and when it fails to secure for labour its competitive share of the product the cause must be sought in the unequal bargaining ability of workmen and their employers. The principal disadvantages under which workmen are placed are: First, that their labour resembles a perishable commodity in that it must be sold each day if they are not to incur loss. This circumstance forces them at times to accept wages that are below their normal earning capacity, but less often than many writers represent. The typical workman, it should be remembered, is not the unemployed seeker after a job, whose unfortunate plight is so often pictured, but the man already employed, who is looking for a somewhat better position. Unemployment often forces workmen to make bad bargains, but even bad bargains may suffice to enable them to make better terms with their next employers. Only when unemployment continues so long as to break the spirit and

lessen the efficiency of a workman is it likely to cause a permanent lowering of his earning capacity. A second disadvantage results from the superior knowledge which employers usually have of the conditions that influence the wages contract. More intelligent as a rule, and able from their position to take a broader survey of the labour market, employers can often persuade workmen to accept terms much worse than free, all-sided competition would secure for them. A third disadvantage results from the actual or tacit understandings which often restrain employers from competing freely for employees by advancing wages. There is a strong reluctance on the part of employers to "spoil the labour market," and even when they are not combined in employers' associations, as often happens, this serves to make them conservative in reference to wages.

Competition between Employers an Active Force

The tendency of the above disadvantages is to render workmen inferior to employers as bargainers and to cause them to accept less than their fair share of the products they help to produce. This, it must be clearly understood, is only a tendency. Any disparity between current rates of wages and the value of the product which labour is able to produce affords an inducement to employers to secure more hands. Ordinarily this motive is strong enough to overcome the reluctance which employers feel to bidding up wages, and ordinarily competition between them is sufficiently active to maintain wages even when the ignorance and inertia of workmen might lead them to accept less than market conditions call for. Only in cases in which the isolated workman, who is temporarily out of employment, bargains with the unscrupulous employer is full advantage likely to be taken of the former's weakness. As a protection against this situation workmen have devised and perfected labour associations or "trade unions," which not only put them on an equality with employers in making wage contracts, but even in some instances turn the scales in their favour and enable them to secure wages above normal competitive rates.

Nature of the Labour Movement

§ 220. The labour movement is the term applied to the spontaneous efforts of wage-earners to better their condition through labour organisations. Starting in its modern form in England at the time of the industrial revolution, it has spread to every country which has introduced the factory system and

advanced with increasing momentum until it is one of the most significant features of the present industrial order.

Objects of Labour Unions

The purpose of labour organisations, or trade unions, is, in general terms, to advance the interests of the workmen who form them. To accomplish this they choose officers (usually a president, vice-president, secretary, treasurer, and members of a standing council or executive committee), accumulate funds, administer mutual insurance or benefit features, bargain with employers in reference to wages, hours, and other conditions of employment, organise and carry through strikes and boycotts, collect and disseminate information in reference to labour conditions, and agitate for legislation designed to promote the interests of labour. Starting with local organisations, the labour movement has now progressed in Great Britain and the United States to a point where it includes unions of unions of various kinds and designed to serve various purposes. In all well-organised trades the local branches are federated or "amalgamated" into national organisations. In cities, local unions are usually organised further into "trade councils," or "united labour leagues," which look after the general interests of organised labour within the locality. Related trades, as, for example, the building trades, are frequently federated also in each locality into organisations like the United Building Trades, which are designed to assist individual unions to accomplish their objects when these are not deemed at variance with the interests of the whole body. Finally, in the United States, a large proportion of the organisations, both local and national, are members of the American Federation of Labour,* which stands for the general interests of organised labour.

The Membership of American Unions

Exact statistics of the membership of American labour organisations are not available, but it is certainly within the truth to say that over 15 per cent. of the 10,000,000 odd men returned by the census of 1900 as employed in trade, transportation, and manufacturing and mechanical pursuits were members of unions. Of these nearly 1,000,000 were associated with the American Federation of Labour. The membership of British

* On June 1, 1903, there were affiliated with the American Federation of Labour, 108 international unions, 28 State branches, 555 central bodies, and 1988 local trade and federal labour unions.

trade unions is considerably larger, being returned as 1,905,000 on December 31, 1900. This is due partly to the fact that labour is there more fully organised and partly to the greater preponderance of wage-earners in the population.

Of British Unions

The British Board of Trade publishes each year returns indicating the condition of the 100 principal unions in the country, which throw interesting light on different phases of the labour movement. In the year 1900 these unions had a membership of 1,150,000 odd and an income aggregating nearly £2,000,000. Of this latter they spent less than £1,500,000 and they closed the year with a surplus averaging £37,670 for each organisation. The principal items of expenditure for the year were working expenses, 25 per cent. of total; unemployed benefits, 18 per cent.; dispute or strike benefits, 10 per cent.; sick and accident benefits, 22 per cent.; superannuation benefits, 13 per cent.; and miscellaneous benefits and grants, 12 per cent. Similar statistics for American unions would undoubtedly indicate smaller proportionate expenditures on benefit features, except strike benefits, and larger working expenses. American unions are also less well supplied with surplus funds than those of Great Britain.

Importance of Legal Questions

As a preparation for discussing some of the problems that have arisen in connection with the labour movement, it will be well to review briefly the development of the law in reference to labour organisations in Great Britain and the United States. The intimate relation between the legal systems of the two countries makes an understanding of the English law on this subject indispensable to American students of the labour problem.

The Development of Trade Union Law in the United Kingdom

§ 221. Until 1824, combinations of workmen designed to raise wages or shorten hours were not only condemned as conspiracies under the common law of Great Britain, but were prohibited by statutes, the last and most general of which were passed in 1799-1800. During the first quarter of the last century, Parliament was brought to see that this prohibition was both unfair and unenforceable, and repeal followed in 1824 and 1825. In the opinion of the courts, however, this did not alter the common-law rule against conspiracies, and in consequence labour organisations continued to be of doubtful legality in

Great Britain until expressly permitted by the Trade Union Acts of 1871 and 1876, and the Conspiracy and Protection of Property Act of 1875. The worst phase of the situation which intervened during the fifty years prior to 1875 was that there was no clear consensus of opinion as to what was and what was not conspiracy under the common law. Even when not proceeded against directly, labour unions found, when they wished themselves to proceed against defaulting officials, that they enjoyed no legal status, and hence could not recover damages, however clear the evidence.

Growth of Unions

The acts referred to not only sanctioned labour organisations by declaring that in future no action in connection with a trade dispute which was not criminal if committed by an individual should be indictable as a conspiracy because committed by a number of individuals, but also provided for their registration and for the protection of their funds. In consequence of this encouragement the labour movement has made remarkable progress in Great Britain since 1875, and labour organisations are now a dominant influence in determining wages and conditions of employment in many branches of industry.

English Law of Conspiracy

§ 222. The same acts which legalised trade unions amended the criminal law so as to remove all uncertainty as to the lengths to which workmen might go in their efforts to improve their condition. Thus it was provided (Act of 1875) that malicious breach of contract of service on the part of an employee of a municipal gas or water company, calculated to cut off all the supply of either of these necessary commodities, should be a criminal offence punishable with a fine or imprisonment. Another clause declared "intimidation," "persistent following," "hiding tools" or other property, "watching or besetting" a house or work-place, or following in company with others "in a disorderly manner" with a view to inducing a person to do something against his will, to be crimes if committed by individuals, and consequently conspiracies if committed by a number of individuals acting in concert. Although there has been some diversity of opinion as to the meanings properly attaching to these different phrases, judicial interpretation has now established pretty clearly the conduct that is permissible in Great Britain during a labour dispute.

Labour Unions Liable for Damages

For some time after the Trade Union Acts were passed it was assumed that labour organisations, while perfectly legal and able (under these acts) to sue their own officers, were without corporate responsibility and consequently not themselves liable to suit or punishment. This view has been dispelled by recent decisions of English courts, of which the most important was rendered by the House of Lords, the court of last appeal under the English system, in the Taff Vale case in July, 1901. The substance of this ruling was that a labour organisation, although not a corporation, is nevertheless a legal entity, and that, as such, it is responsible for its own acts and the acts of its authorised agents and may therefore be sued and mulcted in damages for injuries inflicted by itself or its agents, or for failure to fulfil its legally binding contracts. There is great difference of opinion as to the effect this decision is likely to have on the progress of the labour movement. That it will compel labour organisations to proceed with greater circumspection than in the past is evident. So far as this results in greater regard for law and order it can only be advantageous. Its possible bad effects are found in the danger that it may involve labour organisations in ceaseless and, in the end, useless litigation calculated not only to deplete their treasuries,* but to divert them from their proper objects.

The Law in Reference to Labour Unions in the United States

§ 223. The development of labour organisations in the United States has not been checked to any appreciable extent by legal restrictions. Strikes for the purpose of advancing wages or shortening hours have rarely been held to be illegal, and in many of the States they are expressly authorised by statute. In fact, the attitude of State legislatures has been uniformly favourable to labour organisations, some of them even going to the length of prohibiting employers from discharging employees on the ground that they are members of such bodies. Strikes for other purposes, as, for example, to compel an employer to reinstate a discharged employee or to discharge an employee who is not a member of the union, have sometimes been condemned as conspiracies. The opposition of the courts in such cases has been based not on hostility to labour organisations as

*The final award against the union in the Taff Vale case amounted to £23,000.

such, but on a desire to uphold the rights of persons who are not members of them. Thus the Court of Appeals of New York State, in branding as a conspiracy the effort of a union to secure the discharge of a non-union man, used the following language: "Public policy and the interests of society favour the utmost freedom in the citizen to pursue his lawful trade or calling, and if the purpose of an organisation or combination of workingmen be to hamper or restrict that freedom, and through contracts or arrangements with employers to coerce other workingmen to become members of the organisation and to come under its rules and conditions, under the penalty of loss of their position and of deprivation of employment, then that purpose seems clearly unlawful and militates against the spirit of our Government and the nature of its institutions."* This decision is cited because a few years later† the same court, looking at the same question more from the point of view of labour unions, decided that a strike for a similar purpose was lawful, on the ground that the object sought was not the injury of the non-union employee, but the preservation of the union. So long as there seemed to be no malice in the action, and violence and intimidation were not resorted to, it was held that the incidental injury to the non-unionist could not render it a conspiracy. This reversal of opinion illustrates fairly well the difficulties which American courts encounter in their efforts to apply the common law of conspiracy to labour cases and explains why they arrive at such diverse conclusions as are shown by the authoritative decisions of the courts of the different States. It would be a great gain if the whole question of the nature of conspiracy in connection with trade disputes could be settled by statute in the United States as it was in Great Britain by the Act of 1875.

The Influence of English Precedents

Until quite recently the view that unincorporated labour organisations were not liable to be sued for damages was held in the United States as in Great Britain, but the English decisions cited have already been quoted with approval by American courts, and several cases are now on record in which labour organisations as such have been sued and verdicts against them

* In Curran *vs.* Gallen, 152 N. Y. 33 (1897).

† In National Protective Association *vs.* Cummings, 170 N. Y. 315 (1902).

awarded. There seems every reason to believe that labour organisations in the United States will in future be held responsible for their own acts and the acts of their authorised agents, even though they be unincorporated, except in States in which they are expressly relieved from responsibility by statute. In the less highly developed condition of American labour unions and of American judicial opinion on the labour problem, this novel doctrine may serve to retard the progress of the labour movement even more than it is likely to in Great Britain. In order that it may not prove an unfair weapon in the hands of employers, the acts which a union or its agents may commit with impunity during the progress of a strike should be clearly set forth in statute law.

The Benefit Features of Labour Unions

§ 224. As indicated in the statistics given in Section 220, expenditures for benefits constitute a chief item in the budgets of trade unions. This may well excite surprise on the part of persons who look upon these organisations as little more than strike clubs, and requires some explanation. The benefits paid, which are, as noted, for unemployment, accident, illness, superannuation or death, are defended by unionists less on the ground that a union is suited to act as an insurance company than that it may assume this function with little added expense, and that by this means it can add largely to its resources for use in time of emergency. Mutual insurance is not, in other words, an object of trade unions so much as a means to their real object, the improvement of the conditions of employment for their members. The ready objection to the use of benefit features as a lure to attract members and to add to the size of the strike fund is that it may lead a union to default on the benefit payments it has promised and thus in the end do it and its members more harm than good. Unionists maintain that this rarely happens, since, after a strike, members are usually willing to submit to higher dues until the surplus is restored. Another objection urged by unionists themselves is that benefit features are apt to make union officials too conservative and to divert their attention from the primary purpose of their organisations.

A decision as to the wisdom of including insurance, other than out-of-work insurance, among the functions of

trade unions must depend upon the circumstances of each particular case. Where no better mutual insurance association is available such an extension seems not only justified, but called for. On the other hand, the business of insurance is not one for which a trade union is particularly well adapted, and there is little question that the needed service can be performed more cheaply and safely by an association having this for its sole object. Such associations, called "friendly societies," are already numerous in Great Britain and are not unknown in the United States. As time goes on there seems reason to believe that they will gradually relieve the unions of this particular function.

Collective Bargaining

§ 225. Intelligent unionists rely chiefly upon collective, as distinguished from individual, bargaining to secure the advances in wages and the shortening of hours for which they are always striving. Recognising the weakness in bargaining power of the isolated workman, they advocate trade unions as a means of restraining reckless competition for employment and of securing for all concerned standard rates of wages which shall equal approximately what each given grade of labour is worth to employers. Where employers accept the plan, wage scales are agreed upon by conference between their representatives and representatives of the union, to remain in force usually for a year, and the principal task of union officials during the intervals between bargaining periods is to maintain the integrity of their unions, add to their membership if possible, and see that agreements in reference to wages and hours are lived up to. In the United States this stage of development has been reached in only a few trades. In most of them employers still insist upon the older method of fixing wages and the unions are forced to carry on a struggle for their very existence.

Employers' Objections to Collective Bargaining

The objections which employers make to collective bargaining are various. Many of them insist that they must be permitted to manage their businesses in their own way and that, while they are always ready to treat with their own employees, they will have nothing to do with "walking delegates" or other trade-union officials who try to run their businesses for them. The trade-union reply to this contention is that wages and hours are as much the business of the employee as of the em-

ployer, and if the former prefer to leave their determination to trained representatives they have as good a right to do so as have the latter to hire special agents to treat with the men they employ. Other objections are that the demands of trade-union officials become more and more unreasonable with every concession that is made to them, and that even after a collective bargain has been struck the employer has no guarantee that it will be adhered to by his employees, who may repudiate their own representatives. Unionists reply that while there are all kinds of officials among trade unions, as among other associations, the acceptance by employers of the principle of collective bargaining is a sure way of bringing to the front labour leaders of a conciliatory and pacific disposition. They point to the undoubted fact that in those trades where collective bargaining has been longest practised there is the least dissatisfaction with it on the part of employers. The likelihood that collective bargains, formally entered into, will not be adhered to by employees is, in the opinion of the unionists, too slight to deserve serious consideration. Only in cases in which the system is backed by a weak union, or so recently adopted as not to be understood by the workmen concerned, is this a real danger. Finally, employers object to the standard wage on the ground that it is a device for securing a given rate of pay irrespective of the amount or quality of the work done. They complain that as soon as a standard wage is agreed upon employees begin to devise means of scamping their work, partly to spare themselves effort and partly in the belief that by doing less work themselves they will provide employment for others, who must, without it, either be idle or work for less than the standard wages. This is, doubtless, the most serious objection to the standard wage, but trade unionists have much to urge on the other side. They insist, first, that the objection can apply only to time wages and that, as a matter of fact, piece wages are as frequently the object of collective bargaining as the former; second, that the standard wage is only a minimum wage and that there is nothing to prevent the employer from declining to hire men whose work is not worth so much to him, nor from paying higher wages to men whose work is worth more; finally, that under the competitive wage system employers tend to drive their men so hard

that they become prematurely old, and that the latter are quite justified in using the power that association gives them to moderate somewhat the intensity of their daily efforts.

Conclusion

It is very difficult to strike a balance between these opposing arguments. There is, undoubtedly, a widespread notion among workmen that there is a certain amount of work to be done in the world and that unemployment is due to the fact that this work will not go around so long as those employed continue to labour with the same intensity. This notion seems to have more to do with the various devices that are resorted to to curtail the output from each man's effort than laziness. As a general proposition, it is hardly necessary at this stage to insist that the view that men may make work for others by doing less themselves is entirely fallacious. The amount of work that is to be done depends upon the demand there is for goods of different kinds, and this demand comes itself from goods. If in every department of industry the productiveness of labour should be reduced by 10 per cent. the demand for labour would necessarily decrease in the same proportion. The same conclusion may be inferred from the theory of wages that has been explained. Under freely competitive conditions they are the equivalent of what labour produces, and if workmen deliberately reduce their productiveness their wages must be reduced proportionately. There is no fund other than what workmen produce out of which wages can or will for any length of time be paid. The make-work argument for curtailing the output of each man's toil is thus without foundation, and the policy can only react to the disadvantage of the whole wage-earning class. On the other hand, there is undoubted truth in the assertion that employers often desire workmen to labour with an intensity that wears them out in a few years, and that their best interests and the interests of society demand that they should work with more moderation. When this is the real purpose of trade unions in curtailing the output of each man's labour, the policy is justified, even though it must involve in the long run a proportional lessening of wages. Smaller daily earnings spread out over a greater number of active and efficient working years are better from every point of view than higher wages secured at the cost of health and vitality.

Strikes and Lockouts

§ 226. When employers decline to enter into collective bargains, or when the representatives of a trade union cannot come to terms with representatives of an employer, a strike or lockout is apt to be the result. The former is a general cessation of work on the initiative of the workmen; the latter a similar stoppage brought about by employers. Strikes and lockouts seem at first thought the logical accompaniments of collective bargaining. When a single workman cannot secure the wages or hours he thinks he ought to have he declines to accept employment. Similarly, an employer refuses to employ on terms that are not agreeable to him. Strikes and lockouts appear to be similar phenomena transferred to the larger stage of collective bargaining. There is, however, a vital difference in the two cases. When a workman declines employment or an employer refuses to employ, it is usually with the expectation of making better terms with someone else. This alternative is not usually presented in the case of strikes or lockouts. The cessations of work which they cause is complete until one side or the other gives in, when work is resumed by substantially the same men under the same employer. Strikes and lockouts thus mean, while they last, idleness and loss of earnings, with all of their demoralising consequences, for workmen; idle capital, depreciation of plant and loss of business for employers, and curtailed production of goods and resulting loss in want satisfaction for the community. Even if they are not accompanied, as is so frequently the case, by acts of violence and lawlessness, they are the cause of loss and waste on a scale that makes them a serious obstacle to prosperity. According to a report of the Department of Labour, losses from strikes and lockouts in the United States from January 1, 1881, to June 30, 1894, amounted to $285,000,000. The number of establishments affected was 75,000, so the average loss amounted to $3790. An even more significant indication of the costliness of strikes is afforded by the Report of the Commission on the Anthracite Coal Strike. This estimates that the strike, which lasted from May until October, 1902, involved a loss in receipts to the coal-mining companies of $46,100,000, of which some $25,000,000 would have been paid out in wages had work been continued, and a loss in freights to the coal-carrying railroads

of $28,000,000. The inconvenience and actual suffering to which the public was put by the resulting shortage in coal cannot be measured in money, but it was certainly as serious as the other losses combined.

Use of the Boycott in the Coal Strike

The anthracite-coal strike illustrated also the evils of violence and lawlessness which frequently accompany strikes. In the language of the Commission referred to: "Its history [was] stained with a record of riot and bloodshed, culminating in three murders, unprovoked save by the fact that two of the victims were asserting their right to work, and another, as an officer of the law, was performing his duty, in attempting to preserve the peace. Men who chose to be employed, or who remained at work, were assailed and threatened, and they and their families terrorised and intimidated. In several instances the houses of such workmen were dynamited, or otherwise assaulted, and the lives of unoffending women and children put in jeopardy." Nor were violence and intimidation the only means resorted to by the strikers and those who sympathised with them to prevent others from remaining at work. Free use was made of the "boycott," which the Commission defines as "a form of coercion by which a combination of many persons seek to work their will upon a single person, or upon a few persons, by compelling others to abstain from social or beneficial business intercourse with such person or persons." Among the many examples of uses of the boycott brought out in hearings before the Commission, the following are cited in its Report: "A young schoolmistress of intelligence, character, and attainments was so boycotted, and her dismissal from employment compelled for no other reason than that a brother, not living in her immediate family, chose to work contrary to the wishes and will of the striking miners. A lad, about fifteen years old, employed in a drug store, was discharged, owing to threats made to his employer by a delegation of the strikers, on behalf of their organisation, for the reason that his father had chosen to return to work before the strike was ended. In several instances tradesmen were threatened with a boycott—that is, that all connected with the strikers would withhold from them their custom, and persuade others to do so, if they continued to furnish the necessaries of life to the families of cer-

tain workmen, who had come under the ban of the displeasure of the striking organisations."

Difficulty of Enforcing Law during Strikes

The violence, intimidation, and boycotting, which accompanied the anthracite strike, differed only in degree from what is to be expected in connection with every serious labour disturbance and constitute a strong argument against the strikes and lockouts which excite them. They are especially apt to accompany strikes, for, as the Anthracite Strike Commission declared, "there can be no doubt that without threats, intimidation, and violence toward those who would otherwise be willing to remain at work, or take the places of those who had ceased to work, the coercion of employers, which a strike always contemplates, would be less potent in compelling acquiescence in its demands." Such acts are, of course, illegal, but in self-governing communities it becomes very difficult to enforce the law when the sympathies of the majority are on the side of those who disregard it. Over and over again in the United States it has proved necessary to call out the militia to prevent riot and bloodshed in connection with strikes which have passed beyond the control of the civil authorities. For these reasons, as well as on account of the loss and inconvenience which strikes and lockouts entail, several plans have been proposed for the peaceful settlement of disagreements in reference to wages, hours, and other conditions of employment.

Plans for Avoiding Strikes

§ 227. Among the plans for rendering strikes and lockouts unnecessary, three different types may be distinguished: (1) those which rely on agreements between employers and employees to submit differences to boards of arbitration created by themselves; (2) those which rely upon the submission of disputes to State boards of conciliation and arbitration and the voluntary acceptance of the awards of the latter; (3) those which rely upon compulsory arbitration through State boards or courts.

Trade Agreements

Trade agreements providing for arbitration when collective bargaining fails of its purpose are already common in Great Britain and to a less extent in the United States. After a protracted strike or lockout both employers and employees are likely to recognise the desirability of some arrangement that will preclude similar disturbances in the future and out of this

feeling some plan for arbitrating differences is very apt to develop.* Such plans are highly beneficial so long as they accomplish their purpose, but experience seems to indicate that they can only deal with minor differences between employers and employees. When important issues arise on which the views of the two are diametrically opposed, the compromise which is suggested by a board of arbitration may be acceptable to neither. In such cases both may prefer to fight it out in the old way. If the award of the board is less in the nature of a compromise than a yielding of the whole point to one side or the other, then acceptance by the aggrieved party is sure to be grudging, and if the latter feels strong enough to undertake a struggle the whole machinery for collective bargaining may be repudiated. The situation is similar to that between great nations which have agreed to refer their differences to arbitration in preference to going to war about them. Such agreements will be adhered to so long as no serious differences arise, but, in the absence of any outside authority to enforce them, they are very likely to be broken when one or the other thinks it could gain more by fighting.

State Boards of Conciliation and Arbitration

Experience with the failure of trade agreements to supersede strikes and lockouts has led most countries to provide public boards of conciliation and arbitration. These may be purely voluntary bodies dependent upon the invitation of one or both of the parties to the trade dispute for power to take any part in it, or independent to the extent that they may investigate the causes of a dispute and decide as to its merits, although unable to compel the parties concerned to accept the decision or refrain from fighting it out in their own way if they prefer. The first type of board was that first tried in the United States, and it was soon made clear that in a great majority of cases neither party to an industrial dispute cares to submit it to arbitration before it has passed beyond the point where a peaceful settlement can be affected. This convition has

* A description of the more important trade agreements in operation in the United States, which have arbitration as one of their features, is given in the *Reports of Proceedings of the National Conference on Industrial Conciliation and the Industrial Conference of the National Civic Federation*, 1901 and 1902.

led to the creation in Great Britain and in several of the States of the United States of boards of conciliation and arbitration which have power to investigate the causes of industrial disputes on their own initiative. There seems reason to think that much more might be done along this line in the United States. In a great majority of cases the outcome of a labour dispute is determined by the view which the public takes of the points at issue. This is because neither side is strong enough to hold out against the other plus the public. The great difficulty is that without some means of self-education the public can become acquainted with the grounds for a labour dispute only after it has gone too far for peaceful settlement. A State board of conciliation and arbitration with power to intervene on the instant that it learns of a labour dispute may at times succeed in effecting a settlement by simply bringing the parties together and suggesting possible bases of agreement, at the same time that it removes misunderstandings and assuages wounded feelings. Failing in this it may, by making public its findings in the case and indicating clearly the settlement which appears to it fair, bring such pressure to bear upon the less conciliatory disputant that a compromise will seem better than a fight and a prolonged strike or lockout will be avoided. Thus, although without power to enforce its award, a State board of conciliation and arbitration may often prevent strikes and lockouts.

Reasons for Government Interference

The chief justification of government intereference to settle a labour dispute is that the public interest is always more or less involved and that for the sake of the public no effort should be spared to preserve industrial peace. It was on this ground that the President of the United States intervened in the anthracite-coal strike already referred to. In its Report the Commission, which he created, declared that it had been impressed by " the apparent lack of a sense of responsibility to the public at large, manifested by both operators and mine workers, in allowing the controversy between them to go to such an extent as to entail upon millions of their fellow-citizens the cruel suffering of a fuel famine." In its opinion, it continued, " the questions involved in [that] controversy were not of such importance as to justify forcing upon the public consequences so

fraught with danger to the peace and good order as well as to the well-being and comfort of society. If neither party could have made concessions to avoid a result so serious, an arbitration would have prevented the extremity which was reached." To secure such a result in future the Commission recommended that the President and the Governors of the various States be given power to appoint "commissions of compulsory investigation" whenever industrial disputes appear to them of sufficient importance to justify such a course and that such commissions be clothed with ample powers to enable them to collect all requisite information and decide intelligently as to the merits of the controversies. The utility of such commissions of compulsory investigation cannot be doubted, and it is to be hoped that the recommendation may be followed by Congress and the State legislatures.

Compulsory Arbitration

§ 228. In the United States, notwithstanding the disregard of the public interest so characteristic of both employers and employees during the progress of industrial disputes, there is as yet little demand for any more radical remedy than compulsory investigation. Nevertheless the experiments that are being tried in Australasia with "compulsory arbitration" deserve to be watched with attention. The same forces that have led all countries to put a stop to civil strife and insist that citizens who cannot agree shall bring their troubles into court rather than fight over them, may in time cause the adoption of a similar policy in reference to industrial strife. If, as many competent witnesses maintain, strikes and lockouts can be entirely superseded by compulsory arbitration without detriment either to employers, employees, or the public, the introduction of the latter in all progressive countries is likely to be a question only of time and occasion.

New Zealand's System

The pioneer in the field of compulsory arbitration was New Zealand, whose first law making strikes and lockouts misdemeanours was passed in 1894. By this Act the country was divided into seven districts, each of which was provided with a board of conciliation, which was to take the initiative in attempting to adjust differences between employers and employees and in case of failure to refer the dispute with recommendations to the Court of Arbitration also created. The

boards of conciliation failed so often to settle disputes referred to them that an amendment was added, in 1901, permitting direct reference to the Court of Arbitration. The latter consists of three judges, one a judge of the Supreme Court, and transacts business in very much the same way as any other tribunal. It has power to subpœna witnesses, examine books, and, in fact, to sift the cases brought before it to the very bottom. The decisions or awards at which it arrives remain in force for three years unless superseded by subsequent decisions, and failure to comply with them is a serious offence. As a result of its activity nearly every trade in the Colony in which industrial disputes may arise is now carried on under stipulations as regards wages, hours, and other conditions of employment laid down in its decisions. The system has thus not only put a stop to strikes and lockouts, but has made the relations between employers and employees subject to judicial determination in somewhat the same way that they were in England in the sixteenth and seventeenth centuries.

The System of New South Wales

The seeming success of New Zealand's experiment induced New South Wales to send a special commissioner to that country in 1901 to study its operation. His report was so favourable that New South Wales also adopted the system of compulsory arbitration, as a substitute for strikes and lockouts, in 1902. Western Australia had adopted it a year earlier, so it is now in operation in three of the states of Australasia. The system of New South Wales differs from its model in that it provides no local boards of conciliation, but requires the reference of all disputes to the Central Court of Arbitration. It also requires that the awards of the latter shall apply not merely to the disputants, but to the whole trade which they represent. Thus the result which has been achieved somewhat unexpectedly in New Zealand, that is, a comprehensive labour code to govern the relations between employers and employees throughout the whole country, is deliberately aimed at in New South Wales. This code is subject of course to modification through the law-making power, but, with the labour legislation considered in the next chapter, it sets very definite limits to free competition and free contract as regulators of industrial relations. Compulsory arbitration is still in the experimental stage

and too novel to be judged either a failure or a success, but it certainly merits the consideration of all countries interested in the solution of the strike problem.

Use of the Injunction in Connection with Strikes

§ 229. Experience with the violence and disorder which so frequently accompany strikes has led in the United States to the free use of the judicial process called "the injunction." This was developed by English courts as a means of preventing irreparable or continuing injuries to property for which, in the nature of the case, if the injury were permitted to occur, no adequate damages could be secured. The peculiarity about the process is that when a court issues an injunction, violation of its order becomes in effect contempt of court and exposes the guilty person to such punishment as the court itself may decree. The ordinary protections accorded to criminals, such as trial by jury, the right to be represented by counsel, etc., are set aside, and the offended tribunal becomes itself prosecutor, judge, and jury all in one. The inevitable tendency of the system is to deprive trials in injunction cases of that judicial temper which should characterise the relation between a court and an accused person, no matter what his offence.

Legal Justification

The applicability of the injunction process to labour disturbances is very clear. Workmen on strike are very apt to commit acts of lawlessness which involve the destruction of property and the interruption of business. Moreover they are usually irresponsible persons in the sense that it would be impossible by means of a civil suit for damages to secure redress after the injury had been inflicted. On these grounds courts readily issue injunctions to restrain workmen from doing illegal acts which involve the destruction of property. Injunctions have even been issued ordering workmen not to strike, on the ground that strikes interrupt business and cause loss, but the best authority gives no countenance to such use.

Extension of Scope of Injunctions

From being express orders to designated individuals to do or to refrain from doing specified acts, injunctions have developed in the United States into sweeping commands to an indefinite number of persons ordering them not only not to do certain things, but to keep the peace in general. In the famous Debs case, growing out of the Pullman strike in 1894, an injunction was issued by a circuit court of the United States to

members of the American Railway Union and "all other persons whomsoever," enjoining them from in any way interfering with the business of twenty-three great railway systems engaged in carrying the mails, and this notwithstanding the fact that interfering with the carrying of the mails is itself a crime!

Reasons for Opposing Resort to Injunctions

Space will not permit a full discussion of the arguments for and against the use of the injunction as a means of preventing violence and disorder in connection with strikes. Perhaps the strongest argument against such use is that in the present state of public opinion on the subject it rarely attains the object aimed at. Employers have in fact been brought to the conviction that an appeal to the courts in connection with a strike is likely to do more harm than good. In the opinion of the writer the prejudice of peaceable and law-abiding workmen against the injunction is well founded. Most of the acts enjoined are themselves criminal and punishable by criminal process. For the courts to interfere in such cases to protect property is in reality to deprive criminals of the protection to which they are entitled in a country which justly prides itself on its free institutions. That the purpose of the interference is not the punishment of crime does not alter this essential fact. Precedents for resort to the injunction are too well established to permit anything but a gradual abandonment of the practice, but it may be hoped that in its use courts will pay increasing regard to the practical effects of their procedure. If they would refrain from issuing injunctions to "all persons whomsoever," as in the Debs case, and confine punishment for contempt to imprisonment until the emergency which makes disregard of the injunction probable has passed, the worst abuses that have been charged to the practice would be avoided without any impairment of its efficiency as a means to the prompt suppression of disorder.

The Influence of Labour Unions on Wages

§ 230. The theory of wages that has been explained in these pages is that under conditions of free, all-sided competition workmen will be able to secure wages corresponding closely to the additions their labour makes to the value of the product. We have now to inquire what effect the presence of trade unions has upon the operation of this law. Do they serve

merely to equalise conditions between employers and employees so that the competition between them is really freer because fairer, or do they introduce an element of monopoly on the side of labour which enables workmen to secure more than free competition would bring to them? In the opinion of the writer their influence in all but exceptional cases is confined to the first effect. In most trades in the United States there are both union and non-union men seeking employment. The former are striving constantly to induce the latter to unite with them in the effort to secure better terms from the employers, but because of selfishness, short-sightedness, indifference, or some other reason, there are always some of the latter who refuse to do so. As a consequence of this situation there is a source of supply on which employers may draw for their labour in case of emergency, which the unions are unable to control. The competition for employment of this non-unionised labour sets a limit to the influence which the unions may have upon wages. The very best they can do for their members is to secure for them the full competitive rate. If they try to secure more employers will refuse to employ all of them, defections to the ranks of the non-unionists will occur, and the competition for employment of the latter will break down the standard rate. On the other hand, if they follow their own interest intelligently they can secure not only for their own members, but for all the workmen in the trade, the full competitive rate of wages. Representative employers can afford to pay this and will do so if their ability in bargaining is matched on the other side. The services the unions perform in securing this result may be summarised under the following heads: (1) they are organised to resist unfair terms and to cause loss to the employer who attempts to cut wages below the fair competitive rate; (2) they keep workmen informed as to the rates that are actually paid and in this way protect them from making bad bargains through ignorance; (3) they inform themselves in regard to general market conditions and force employers to advance wages when conditions are favourable, more promptly than they would without such coercion.

The Case of Open Unions

The above account of the influence of trade unions fails to consider trades in which all or practically all workmen belong

to unions. Such trades are, as stated, rare in the United States and even in Great Britain, but that makes them no less interesting, since they represent the type whose realisation is the goal of trade unionists' efforts. The influence of the unions on wages in such trades depends upon their policy in reference to the admission of new members. This policy is determined in most factory employments by the ease with which the task to be performed can be mastered. When, as in the textile trades, no long apprenticeship is necessary, the unions must admit everyone to membership whom employers will hire, on pain of losing control over the industry. When a union is open in this way to all comers the rate of wages which it can secure for its members cannot exceed the competitive rate for workmen of the given grade of skill. If it did employers could not afford to hire all of the members of the union. The unemployed would become dissatisfied and either leave the unions or force them to lower the standard rate until the demand should absorb them as well as their more fortunate fellows. In either event the standard rate would be brought to correspond closely to the competitive rate, as it was by the competition of non-unionists in the previous case.

Labour Unions Sometimes Monopolies

§ 231. There are some trades in which the unions control practically the entire labour force and in which conditions permit the use of such control as a means to securing monopoly earnings. These are trades in which a long period of apprenticeship is necessary to the mastery of the tasks to be performed or in which legal obstacles, such as the requirement of a certificate of proficiency as a condition to engaging in the trade, prevent any sudden increase in the number of master-workmen. When a trade union becomes strong enough in a trade of this type to limit the number of apprentices, or to determine the period of apprenticeship or the severity of the examination necessary to entrance to the trade, it may exercise effective control over the supply of competent workmen. By limiting such supply it may secure a virtual monopoly for its members and advance their wages to any point which the demand for their services permits. The management of such a monopoly calls of course for tact and skill because it has to contend with the opposition of other workmen, who would like to learn the trade

and are prevented from doing so, with the opposition of employers who object to paying such high wages, and with the opposition of the consuming public which objects to paying high prices for the products of the labour monopoly. Nevertheless such monopolies have existed and do exist, and the realisation of them is the deliberate purpose of many trade unionists.

State and Federal Laws Helpful to Unions

In the United States there are both State and national laws that directly further the monopolistic ambitions of trade unions. The State of Pennsylvania has a law requiring men who wish to become master miners to work as helpers for a certain period and to pass then a State examination. New York State has similar laws in reference to plumbers and horse-shoers. The purpose of such statutes is of course to insure a certain degree of proficiency on the part of workmen who perform these important services, but that they assist trade unions in their efforts to control the supply of labour in their trades is beyond question. A Federal law which operates in the same direction is that prohibiting the entrance into the country of workmen under contract of employment. It might appear on general principles that the immigrant whose reputation at home was such that he could secure a contract of employment from an employer in this country would be a better citizen than the immigrant who was attracted only by the vague hope of bettering his condition, but this view disregards the special interest of those with whom the newcomer would compete for employment. From their point of view, as voiced by the trade unions, the contract labourer is a much less desirable acquisition than the mere immigrant. The former enters the country as a non-unionist, or "scab," at the very outset and the possibility of hiring him may enable an employer to be quite independent of a labour organisation which, but for this outside competition, could control the labour supply in the particular trade. The law which prevents such resort to the foreign labour market to break a strike has assisted trade unions in the United States to win more than one victory. So far as it enables them to maintain higher wages for American workmen in all branches of industry—and this is believed to be its principal effect—its influence is beneficial, but when it serves to confirm a

close union's monopoly of the labour supply in its particular trade and to enable those benefited to secure monopoly earnings, the result is obtained, as in the case of other monopoly incomes, at the expense of the whole community. It injures consumers since it compels them to pay higher prices for the goods whose production is controlled by the labour monopoly, and it injures other workmen since it limits the field of employment open to them and forces wages in other trades down to lower levels than would result from free, all-sided competition.

Monopolistic Unions to be Condemned Like other Monopolies

In the United States few trade unions have succeeded in establishing labour monopolies, but in the building trades, in the glass industry, and in a few other employments such monopolies are complained of. That they are as much open to public condemnation as any other species of monopoly not controlled in the general interest seems to the author too clear for argument. Unions which make such control of the labour supply in their trades the object of their efforts and seek to realise it by limiting the number of apprentices, charging exorbitant initiation fees, refusing to work with non-unionists, and using every means from strikes to intimidation and violence to prevent the latter from gaining a foothold in the trade, must expect to meet the same criticism that is levelled against the trusts and other would-be monopolies. All of these policies except intimidation and violence are defensible as means to maintaining standards of workmanship and standards of pay proportionate to earnings in other trades. None of them are defensible as means of preventing ambitious and competent men from mastering the trades concerned and deriving the same benefits from their energy and enterprise as do those already in the trade. Trade unionists will do well themselves to note the distinction between labour organisations aiming to promote the interests of labour generally and labour monopolies aiming to promote the interests only of the fortunate few who happen to be members at the expense of the many who are not.

Educational Work of Labour Unions

§ 232. In addition to the purposes that have been considered trade unions have other objects that deserve commendation. Perhaps the most important aspect of their work is the educational. By bringing their members together to discuss ques-

tions of common interest they do a great deal to make them more intelligent and broader in their insight into economic and political problems. The experience which workmen get in managing their unions helps them to appreciate the importance of organisation as a condition to success and to perceive the value of the industrial service which their employers render. In the same way the accumulation and administration of the funds which they collect gives them clearer notions in reference to the origin and service of capital. From these facts it results that leading trade unionists are apt to be men of unusual ability, whose views on the labour question are conservative rather than radical and who, in the absence of personal prejudice, command the respect and esteem of employers almost as much as of their fellow workmen.

Schools of Citizenship

The most important book dealing with trade unions in England that has yet appeared bears the significant title, "Industrial Democracy." This makes prominent another service that trade unions render. As miniature democracies they reproduce on a smaller scale the self-governing states on whose success the future so largely depends. Their members learn in them how to give way when they cannot persuade, how to sacrifice smaller for greater ends, and in general how to defer gracefully to the opinions and prejudices of others—qualities which are essential to the successful working of democratic institutions. The authors of the work referred to, Mr. and Mrs. Webb, conclude that trade unions are preparing the way for the great co-operative commonwealth or socialistic state which they think is in process of development. Whether they are right in this anticipation or not, there can be no question of the value of membership in a trade union as training for useful citizenship.

Active in Securing Needed Labour Laws

Still another service rendered by trade unions is in connection with labour legislation. Through their very position trade unionists are led to recognise the need for labour laws before it is appreciated by the whole community. Again and again in Great Britain and the United States their agitation has secured the enactment of beneficent labour regulations. It would be exaggerated praise to ascribe to them all the progress that has been made in this field, or to maintain that they have

not at times agitated for bad as well as for good labour laws; at the same time trade unions deserve more credit than any other single agency for what has been accomplished.

The Future of the Labour Movement

§ 233. Prediction in reference to the future of trade unions would be both hazardous and out-of-place in this connection, but a few suggestions may be ventured as a conclusion to this sketch of the labour movement. There can be little question that trade unions have come to stay so long as the present organisation of industrial society is maintained. For employers to fight against them is as idle as it is for the whole community to fight against combination and organisation on the side of employers themselves. What is to be opposed is not trade unions, which deserve encouragement and assistance on the part of all who are really interested in the improvement of the working masses, but the monopolistic tendencies of unions. The latter are bad, not alone for the reasons enumerated, but because they foster a type of labour leader who thrives on corruption and blackmail, rather than because of his services to the cause of labour. The indications of these monopolistic tendencies are rules which limit apprentices, not by requiring that period of tuition necessary to thorough mastery of the trade, but absolutely, so that the supply of master workmen is prevented from growing with the expansion of the demand for their services; high initiation fees and other bars to free entrance to the union on the part of men competent to carry on the trade, coupled with uncompromising hostility to non-unionists; opposition to manual training, trade schools, and other plans for increasing the industrial efficiency of the whole working population, and, in short, disregard of the interests of workmen generally through exclusive regard to the interests of members of particular unions. These phases of trade unionism ought to be opposed not only by employers, but by all disinterested students of the labour problem. They are, of course, no more blameworthy on the part of workmen than are similar efforts on the part of other individuals who would like to protect themselves from the wearing pressure of competition and enjoy monopoly earnings, but they are socially disadvantageous and therefore to be frowned upon. The future of trade unions must depend largely on the promptness with which workmen and the public

learn to distinguish between the good and the bad in the labour movement, and the thoroughness with which the latter is stamped out by public opinion backed, if need be, by repressive legislation.

REFERENCES FOR COLLATERAL READING

The literature of the labour movement in the United States is, considering the importance of the subject, extremely limited. The following titles deserve mention: *Ely*, The Labour Movement in America (now out of date), and article on *Trade Unions (in the New International Encyclopædia); **Brooks*, The Social Unrest; **Levasseur*, The American Workman; **Mitchell*, Organised Labour; National Conference on Industrial Conciliation and Industrial Conference of the National Civic Federation, 1901 and 1902; Reports of the United States Department of Labour; Bulletins of the United States Department of Labour; Reports and Bulletins of the Bureau of Labour of Massachusetts; Reports and Bulletins of the Department of Labour of New York (these official publications are invaluable sources of information); The American Federationist (published by the American Federation of Labour); Report of the Commission on the Anthracite Coal Strike (1903); Report of the United States Industrial Commission, Vols. VII., VIII., XII., XIV., and XVII.

The labour movement in Great Britain receives consideration in the following works: **Sydney* and *Beatrice Webb*, Industrial Democracy, and History of Trade Unionism; Reports of the Board of Trade (British) on Labour Statistics; *de Roussiers*, The Labour Question in Great Britain; **Drage*, The Labour Problem; *Report of the Royal Commission on Labour (1894); *Howell*, Trade Union Law, and Labour Legislation, Labour Movements and Labour Leaders.

New Zealand's experiment with Compulsory Arbitration is discussed in the Report which Judge Backhouse prepared for New South Wales entitled, *Report of the Royal Commission on the Working of Compulsory Arbitration Laws, and in Chap. I., Vol. II., of **Reeves*, State Experiments in Australia and New Zealand (bibliography).

CHAPTER XXII

THE LEGAL REGULATION OF LABOUR

Reasons for the Legal Regulation of Labour

§ 234. The *laissez-faire,* or let alone, policy, which was substituted for the policy of legal restriction in Great Britain during the first half of the last century, has been subject to one important exception. It has never been allowed to include fully the relations between employer and employee. Reasons for this exception were suggested in the last chapter, but they must now be explained at greater length as an introduction to a brief discussion of the labour laws in force in different countries and the need of still further restrictions.

Employees Do Not always Bargain on Equal Terms with Employers: Children

Unorganised workmen do not bargain on terms of strict equality with employers. That this is the case when the workers are children will scarcely be questioned by anyone. Employers of such labour stand to it in a relation half paternal and have it in their power to make or mar the young lives that are devoted to their service. It might be thought that considerations of common humanity would lead employers of children to fix hours and other conditions of employment that would not be injurious to them. Unfortunately this is not the case. In every country labour laws have been found necessary to protect children from the rapacity and cruelty not only of employers, but even of their own parents.

Women

It is generally, although not universally, conceded that protective labour laws ought to extend to women as well as to minors. Such extension is defended by those who think the activity of women should be confined as far as possible to the domestic circle, on the ground that women are unfitted for the rough and tumble of industrial competition and if permitted to work for wages at all, should do so on conditions marked out for them by law. A reason less open to objection is the simple fact that women have not yet learned to organise unions or to protect themselves in other ways and are therefore the prey of unscrupulous employers when the law fails to protect them.

Men

If the second of the above reasons is accepted as a justification for laws protecting women wage-earners, there seems no reason why such laws should not be extended to men in those trades in which they do not bargain on equal terms with their employers. This view appears to be gaining ground and has, as we shall see, already found expression in connection with legislation affecting the so-called sweating trades.

Dangerous Trades

Another reason for protective labour laws, than inequality between employers and employees, is the ignorance and carelessness of the latter. Ignorance often leads workmen to assume risks and undertake tasks on terms that they would not with full knowledge accept. Once committed, the inertia that is characteristic of all men prevents them from repudiating their bargains. Carelessness is an even more common cause of contracts of employment that are socially undesirable. This is conspicuously the case in dangerous trades. The natural optimism of workmen leads them to feel that whatever the dangers may be, they themselves will escape. The result is that they accept risks, even certainties, of disease and death on terms that compensate neither them, their families, nor society at large for the waste of life which such employments entail. It is on this account that special legislation in reference to the conditions of employment in dangerous trades has been found necessary, and on it also are based the laws in reference to employers' liability for injuries to their employees and industrial insurance that are discussed in Section 244.

Purpose of Protective Laws

In drafting protective labour laws, it is hardly necessary to add, the end to be held constantly in view should be the good of the whole community. This should be conceived in no narrow spirit, but should take full account of the effect of restrictions on slowly evolving society. A temporary benefit should not be preferred if its result is likely to be the conservation or encouragement of an undesirable type of person, nor should temporary inconvenience or loss be shunned if its long-run result is likely to be advantageous.

History of Labour Legislation in Great Britain

§ 235. The history of labour legislation in Great Britain is instructive on many accounts. No country has gone further in its adoption of the *laissez-faire* policy as regards other industrial relations and in none have the successive steps in the de-

velopment of the comprehensive law which now protects not only children and women, but adult men, been so vigorously opposed or finally passed on the basis of such careful study of actual conditions.

1802-1831 The first five acts to be passed from 1802 to 1831 applied only to cotton mills and were so moderate in their requirements as to present a striking contrast to the laws now in force. The Act of 1802 sought to correct the frightful abuses to which the apprenticeship system had given rise, by limiting the work of apprentices to twelve hours a day and protecting them in other ways. The Act of 1819 applied to all children employed in cotton mills. It prohibited the employment of children under nine years of age and limited the work of those under sixteen to twelve hours a day or seventy-two a week, no part of which should be performed at night. Finally the act of 1831, while re-enacting earlier restrictions, prohibited altogether night work for minors and limited the hours of those under eighteen to twelve a day and nine on Saturday, or sixty-nine hours a week.

Act of 1833 After 1831 the agitation for labour laws assumed a more radical tone and each new act was made the basis for still further demands. Successive royal commissions were appointed to investigate the conditions of employment in different trades and their reports supplied abundant material for the advocates of protective laws. The Act of 1833 applied to all textile mills and extended to them (except silk mills) the restrictions of the Act of 1831. It added the important distinction between "children" (from nine to thirteen years of age) and "young persons" (from thirteen to eighteen), and limited the labour of the former to forty-eight hours a week. It also created four factory inspectors to enforce the law and required age certificates to be made out by physicians rather than by parents as theretofore.

Mining Act of 1842 The next important advance was in connection with the mining-industry, conditions in which had been shown to be particularly distressing by the Report of the Royal Commission appointed in 1840. "A very large number of labourers employed were under thirteen, since children, on account of their diminutive size, were best fitted to draw the loads through the low

galleries. Girls and adult females performed the same work as the men. . . Very often children of both sexes worked together in a half-naked state. . . The workmen were in most cases crippled and simultaneously subject to an abnormal development of certain muscles and to numerous diseases, especially of the respiratory organs. . . Immorality and ignorance prevailed to a most frightful extent." * The Mining Act of 1842 attempted to correct these evils by prohibiting altogether underground work by women, or by boys under ten years of age, and by imposing other restrictions.

The Present Law

The Factory Act of 1833 had proved unsatisfactory from the administrative point of view because it failed to specify with sufficient exactness the hours within which work might be performed by the protected classes. This defect was corrected by the act of 1844, which provided that children might work six and one-half hours a day either in the morning or in the afternoon, or ten hours on alternate days, and that young persons and *women* might work twelve hours a day (nine on Saturday), but that these hours plus one hour and a half for meals must be counted continuously from the time work was begun in the morning. The addition of adult women to the protected classes appears to have attracted little attention at the time, although its effect has been to limit the work of adult men employed in the textile industries to the same hours, since it does not usually pay to keep the machinery in motion for their exclusive benefit.† Since 1844 efforts have been directed towards limiting still further the hours of the protected classes and extending similar regulations to all industries. By successive acts the minimum age at which children may be employed in factories or workshops has been raised to ten, eleven, and finally twelve (1874, 1891, 1895); the employment of children under fourteen has been more rigidly restricted, with a view to insuring their continuance in school; the hours of young persons and women have been reduced until they are now fifty-five a week in textile and sixty in non-textile factories; the latter

* Von Plener, *English Factory Legislation*, pp. 23–25.

† According to the report of the factory inspectors, the men employed in the textile industries in 1847 numbered only 181,080 out of a total of 544,876 hands.

and workshops have been subjected to regulations similar to those applying to textile factories; dangerous trades have been regulated; and the machinery for enforcing all labour laws has been perfected until violations are conspicuous by their rarity. The Factory and Workshop Act passed August 17, 1901, codifies all of this legislation into a statute of 163 sections and covering over one hundred finely printed octavo pages, and it is to this that reference is made in future sections when the present law of Great Britain is mentioned.

Constitutionality of Labour Laws in the United States

§ 236. The development of the system of labour laws just described was untroubled by any question of constitutional authority, since under the English system Parliament is supreme. In the United States a constant obstacle to the legal regulation of labour has been the written constitutions. As interpreted by the courts both the State and the Federal constitutions guarantee freedom of contract and immunity from special or class legislation. These guarantees are not absolute. All authorities agree that they may be set aside when necessary in order to protect individuals in their lives, their health, their morals, or their property, that is, in the exercise of the state's "police power;" but unless a labour law can be shown to have this for its purpose and to be reasonably calculated to achieve its object, it will be declared unconstitutional.

Conflicting Decisions of American Courts

A study of American decisions in cases involving labour laws is well calculated to confuse even the legal mind. There is scarcely a regulation, from a simple restriction on the age at which children may be employed to the provision that men may work only eight hours a day in specified industries, that has not been declared unconstitutional in certain sections of the country, only to be upheld as a legitimate exercise of the police power in others. The Supreme Court of Pennsylvania characterised an act prohibiting the payment of wages in orders on a company store as "utterly unconstitutional and void" and went on to say that it represented "an insulting attempt to put the labourer under a legislative tutelage, which is not only degrading to his manhood, but subversive of his rights as a citizen of the United States," and yet such measures have been upheld in most of the other States as proper and beneficent restrictions. The Supreme Court of Illinois declared an eight-

hour law applying to women employed in the sweating trades unconstitutional on the ground that it involved class legislation, and yet the courts in Massachusetts, New York, and even Pennsylvania have affirmed the right of the legislature to single out women and the sweating trades for restrictions which do not apply generally throughout the community. Finally the Supreme Court of Colorado declared unconstitutional an eight-hour law applying to men employed in the mining and smelting industries on the ground that if such a law was calculated to protect the health or morals of anybody, it could only be of the very men whose work was restricted, and that the legislature had no right to restrict freedom of contract for the benefit only of the persons whose liberty was thus limited; and yet the Supreme Court of the United States had declared in upholding the constitutionality of an identical statute previously passed by the State of Utah, that the legislature had the right to protect an individual even "against himself," on the ground that "the state still retains an interest in his welfare no matter how reckless he may be," and that when "the individual health, safety, and welfare are sacrificed or neglected the state must suffer." In all of these cases, except the last, the difference of opinion concerns not the principle involved, but its application, and it requires no great insight to perceive that the really determining consideration was whether the particular measure was deemed wise and beneficent or the reverse. If expedient, a restriction on labour must in the nature of the case be calculated to protect the health or morals, at least of the protected classes. If inexpedient, it becomes thereby an illegitimate exercise of the police power for the simple reason that it is not calculated to secure, in a large sense, the ends for the realisation of which that power exists. It follows that the constitutional obstacle to labour legislation in the United States may be expected to give way as soon as public opinion, and particularly judicial opinion, has been educated to the point where it approves of such legislation. As laws that may be passed in this field are not likely to be enforced unless public opinion is behind them, this obstacle ought not to retard unduly the enactment of such restrictions as industrial conditions call for. In fact, up to the present time, there have been few occasions on

which labour laws which have been really demanded by public opinion have been declared unconstitutional.

Decision in Utah Eight-hour Law Case

§ 237. When a labour law is declared unconstitutional by the highest tribunal in a State there is no appeal, as it is the supreme interpreter of the State constitution. When declared constitutional, however, it must still, if an appeal be taken, run the gauntlet of the United States Supreme Court since the rights which it infringes are protected also by the Federal Constitution. Among the decisions which have been rendered by the latter tribunal none is more significant than that handed down on February 28, 1898, in the Utah Eight-hour Law Case, already referred to. The law under consideration limited the work of all employees engaged in the mining and smelting industries to eight hours a day, and allowed exceptions only when life or property should be in danger. It was thus an extreme type of protective legislation, going far beyond anything previously tried in Great Britain. Nevertheless the Supreme Court declared it a legitimate exercise of the police power and therefore constitutional. Because of its authoritative character the grounds on which the decision in this case was based merit brief consideration. After explaining the nature of the police power and citing decisions showing the field within which it may be exercised, the court concludes * that, " while it cannot be put forward as an excuse for oppressive or unjust legislation, it may be lawfully resorted to for the purpose of preserving the public health, safety, or morals, or the abatement of public nuisances, and a large discretion is necessarily vested in the legislature, to determine, not only what the interests of the public require, but what measures are necessary for the protection of such interests." It then reviews sanitary and safety regulations applying to the mining and smelting industries, which had been held to be constitutional, to emphasise the fact that these had been recognised as dangerous trades. Although such regulations were designed to protect the lives of employees in these industries, the court argues that it would be equally competent for the legislature to enact regulations for the protection of their health, and cites quarantine, and child and women labour laws as cases in point. Coming, then, to the law

* 18 Supreme Court Reporter, p. 383 *et seq.*

in question, the court quotes with approval the reasoning of the Supreme Court of Utah. Employment in the specified industries must be conceded to be unhealthful if too long continued. "Twelve hours per day would be less injurious than fourteen, ten than twelve, and eight than ten. The legislature has named eight. Such a period was deemed reasonable." The law is, consequently, a health regulation calculated to accomplish the object aimed at. Any mere doubt on the point should be resolved in favour of the legislature, which must be assumed to have passed the law in good faith and after careful deliberation. The court then turns to more general considerations. It affirms the propriety of labour laws on the general ground that employers and employees are unequal in bargaining power. "The former naturally desire to obtain as much labour as possible from their employees, while the latter are often induced by fear of discharge to conform to regulations which their judgment, fairly exercised, would pronounce to be detrimental to their health and strength. In other words, the proprietors lay down the rules, and the labourers are practically constrained to obey them. In such cases self-interest is often an unsafe guard, and the legislature may properly interpose its authority." Finally, it affirms the principle already quoted, that in the exercise of its police power the legislature has the right to protect a man even against himself.

Value of this Precedent

The reasoning in the above decision is admirable whether judged as law or as economics, and its general acceptance by State courts in the United States may be counted upon to relieve all desirable labour restrictions from the ban of unconstitutionality. Especially worthy of attention is its insistence that the presumption in labour cases should be in favour of constitutionality, on the ground that the legislature is in closer contact with the actual conditions of industrial life than the courts and better able to judge when the public health is endangered and by what measures it may be protected. If this view were always taken by the courts, scope would be afforded for legislative experiments in the field of labour regulation which might be of value not only to the United States, but to the world.

§ 238. In the United States, as in Great Britain, the develop-

Child Labour Laws in the United States

ment of child-labour laws has been closely connected with the growth of public schools to serve as substitutes for the factory and workshop. Those States which have given most attention to questions of education, like Massachusetts and New York, have adopted the most rigid child-labour laws. On the other hand, the States whose public educational systems are backward, as are those of the Southern States, either have lax child-labour laws or are entirely without them. In general, the child-labour regulations of the United States are more exacting than those of Great Britain, but less rigidly enforced. Thus in Massachusetts and New York no child under fourteen (instead of twelve as in Great Britain) may be employed in any factory, workshop, or mercantile establishment, and children between the ages of eight and fourteen must attend school during the entire school year; but evasions, especially in the latter State, have been common. At the other extreme are some of the Southern States, which impose such moderate restrictions as that children under twelve shall not be employed at all, and those between twelve and fourteen shall work not over ten hours a day (Virginia), or leave child-labour quite unregulated.

Purpose of Such Laws

It needs no argument at this stage of the discussion to prove that the interests of society require that provision be made for the careful training, at public expense, of every boy and girl up to the age of sixteen if not of eighteen.* Merely as a commercial investment, public money spent on such training is sure to yield a princely return in the superior industrial efficiency of the population. In order to insure that full advantage will be taken of the public schools it is necessary to restrict the employment of children more rigidly than regard merely for their physical development would require. On this ground the prohibition of the employment of children under fourteen should be looked upon as only a beginning. By successive steps the minimum age of employment should be raised at least to sixteen, and school facilities should be increased and improved so that all children up to that age can be given the best educational advantages.

§ 239. As regards the labour of women, restrictions in the United States are, on the whole, less rigid than in Great Britain.

Cf. Chapter VII., Section 68, and Chapter XIII., Sections 138 and 139.

Thus in Massachusetts and New York the maximum working periods for women employed in factories are fifty-eight and sixty hours a week, respectively, as compared with fifty-five in textile and sixty in non-textile factories in Great Britain. Several of the States, moreover, impose no restrictions whatever on the employment of women, and in at least one (Illinois) such special restrictions have been declared unconstitutional. The opposition to such regulations, so far as it is disinterested, is based on the fear that they may serve to undermine the spirit of independence of the protected persons. Experience seems to indicate that they have, in fact, a directly contrary effect. By preventing employers from prescribing working hours that would be detrimental to the health of their women employees, they permit the latter to retain that state of mind and body that is indispensable to any real independence of thought or action. So long as the restrictions apply generally to all women and are neither extreme nor unreasonable, there is nothing in them to lessen the self-respect of the protected classes. They are accepted like other conditions over which the parties affected have no control, without lessening in the least their determination in dealing with those other conditions which they may hope to modify. The reasons for regulating the employment of women apply with special force to those who are married. In Great Britain the law prohibits the employment of such women within four weeks after childbirth, and all medical authorities agree as to the importance of such a restriction, where experience shows it to be necessary. Many thoughtful persons think that the law should go even further and either prohibit altogether the employment of married women in shops or factories or limit it to married women without infant children. Desirable as such a limitation would be in most cases, the impossibility of enforcement is a decisive objection to it. It seems wiser to rely upon the education of married women themselves and their husbands, and upon the influence of public opinion, to restrict the employment of married women to cases in which it involves no sacrifice of the interests of children. Up to the present time, in the United States, at any rate, the employment of married women has been too unusual to call for legislative interference.

The Agitation for a Universal Legal Eight-hour Day

§ 240. Restrictions in reference to hours of employment, imposed in some instances by law and in some by the rules of trade unions, have advanced so far in Great Britain and the United States that there is now widespread agitation for a legal eight-hour day, to apply to all employees in all trades. This period of employment has already become general for Government employees in both countries. It is common in the building and other skilled trades. In other employments, nine, ten, and even twelve-hour periods are still the rule, but many people believe that the time is ripe for the change to eight hours.

Objections to Plan

Much as may be said in support of a further shortening of the working day in many employments, the proposal that a uniform period be made to apply to all alike seems unsupported either by reason or experience. Different occupations make different demands on the strength and nervous energy of workmen, and a workday that would be moderate for one kind of employment would be excessive for another. These differences have been considered in the development of protective labour laws in the distinctions made in all countries between manufacturing and mercantile pursuits, and in Great Britain between textile and non-textile factories. To disregard them by establishing a uniform eight-hour day would be to take a backward step. It is doubtless true, as urged by advocates of the eight-hour day, that its adoption for certain trades would involve no permanent lessening of the productiveness of a day's labour. The shorter work period would insure more active and intense exertion on the part of workers than they can maintain when employed for nine or ten hours. On the other hand, it is equally certain that in other trades reducing hours to eight a day would reduce the output proportionately. The effect of this in the long run would be to reduce wages correspondingly, and it is highly probable that such a reduction in wages would in many cases inflict more injury than the shorter working day could compensate. It would seem better for each country to proceed piecemeal towards the realisation of shorter working hours for all employees as in the past, rather than to adopt all at once a regulation which could not but be disadvantageous to many and might prove unsatisfactory to all.

The above objections to an eight-hour law applying to all occupations do not involve any criticism of the policy of restricting by law the hours of men as well as of women. Skilled workmen, especially when organised in trade unions, do not usually require such protection. To unskilled workmen, however, it may be the indispensable means to the attainment of a higher standard of living and of industrial efficiency. The argument that it serves to undermine the spirit of independence has already been examined and rejected. Those who advance it fail to consider that deadening and monotonous toil too long continued is much more inimical to the spirit of independence than any amount of regulation. They also ignore the fact that restrictive labour laws are usually passed out of deference to the wishes of those they are designed to protect, and that they are often the only means by which a determined majority may prevent an ignorant or selfish minority from blocking progress. Here, as elsewhere, it is often desirable for the state to interfere to establish the plane of competition, and experience affords no ground for the view that self-reliance and the spirit of self-help are lessened by an exercise of legislative authority to advance this plane to a higher level.

Restrictions on Labour of Men Defensible

§ 241. Industrial progress, like progress in other fields, has its dark as well as its bright side. The dark side in connection with conditions of employment is presented in the so-called "sweating trades." These are carried on in large cities everywhere and have even spread to country districts. A description of the system as it prevails in connection with the clothing industry will reveal its salient features. As this industry is now carried on, it is divided into various stages. Cutting the cloth from which garments are to be made is performed under the direct superintendence of the manufacturer. The pieces are then tied in bundles and turned over to contractors who agree to have them made up at so much a garment. The latter convey them to their shops, the "sweat-shops" proper, and either have the work done there under their own supervision by poorly paid and overworked men, women, and children, or else subcontract them to men and women who make them up in their own homes. The condition of home-workers is often more wretched than that of the sweat-shop employees

The Sweating Evil

with whom they compete, since they are forced to convert their homes into workshops, to the sacrifice of all of the privacy and much of the sweetness of family life.

Conditions in the Clothing Trades

The evils that result from the sweating system are that wages are low and unequal for the same kinds of work, employment is irregular, hours are long, the premises on which the work is done are insanitary, and, finally, there is little chance for advancement in the trade for the rank and file of workers. The system owes its existence to a number of causes. In the first place, the work to be done is of the simplest character, and any person of ordinary intelligence can learn to do it, after a fashion, after a few hours' instruction. This throws it open to the competition of men, women, and children of all classes and conditions. Home work is taken by the well-to-do wives of labourers as a means of securing pin-money, and also by poor widows struggling to keep their children from starvation. Men too old for any other kind of work sew side by side with young children who ought to be in school. The consequence of this competition is that the labour market is always overstocked and wages correspondingly depressed. In the cities of the United States competition for employment in the sweating trades is made especially severe by the steady influx of immigrants, many of whom find this species of work the easiest to take up, and do not learn, until after they have been in the country some time, how much worse off they are than American workmen in other trades. Another cause is the ignorance and comparative isolation of the workers. This applies especially to those who work at home. They go to the contractor, or "sweater," singly or in pairs, and have to rely largely on his fairness in determining what they ought to get for their work. In American cities the contractors are usually Jews and the home-workers Italians, so race and religious antipathy play their part in connection with the sharp practices of which the former are guilty. The success of the sweater depends upon the shrewdness and relentlessness with which he takes advantage of his position. He makes a special bargain with each outworker and gets the best terms he can, irrespective of what he is paying others for the same work. The different piece prices to which this may give rise was illustrated in Philadelphia during the Spanish-

American War, when army trousers, all of which had to be passed upon by the same Government inspectors, were being made up in different shops for from thirty-five to seventy-five cents a garment. Still a third cause of the system is the irregularity of the demand for the goods produced. At certain seasons work is active and contractors who have taken "hurry-up orders" drive their employees to the extreme limit of human endurance. At other times work is scarce and the competition for it is so severe that earnings are reduced to a starvation level. This irregularity is perhaps the worst aspect of the sweating system, since it is destructive alike of health and character.

Remedies Tried in Great Britain and the United States

§ 242. It is easier to perceive the causes of the sweating system than to devise remedies, and yet much has already been done to improve conditions. In American cities the plan is being tried of requiring premises in which the sweating trades are carried on to be licensed for the purpose, and of making the issue and continuance of licenses contingent on compliance with sanitary and labour regulations. The factory inspectors are required to inspect the shops and homes in which such work is performed and to hold contractors responsible for work done in unlicensed premises. In Great Britain a further step has been taken by making the manufacturers for whom the work is being done responsible for the sanitary condition of the premises in which it is performed, after notification by the inspector that these premises are unsatisfactory. Either system requires for its successful operation a larger force of factory inspectors than has yet been provided. In New York City, where there were on March 31, 1903, over 24,000 licensed work-places, the staff of inspectors permits on the average but two inspections a year. Obviously, under such circumstances many violations of the law must escape detection. Even if rigidly enforced, the measures thus far taken in Great Britain and the United States would remedy only one phase of the sweating evil, that is, the sanitary conditions under which work is carried on. The long hours and low wages, which are its worst features, remain unaffected.

Australasian Experiments

The most drastic remedy yet applied to the sweating evil was adopted by the state of Victoria, Australia, in 1896, through the creation of wage boards consisting of from four to six

members to be chosen one-half by employers and one-half by employees and empowered to fix not only wages, but hours of labour and the proportion of apprentices to be employed in the designated industries. The decisions arrived at by these boards are binding on the whole trade, and can be reversed only by the Supreme Court. Under this system, applying now to more than thirty trades, minimum wages both for time and piecework have been established and maximum hours of employment prescribed. The available evidence indicates that conditions in the sweating trades have been materially improved, and that, incidentally, home work in certain trades has been rendered unprofitable. Of course, one effect of the change has been to increase the number of persons in the colony who are dependent on public charity, but the exclusion of these incapables from the ranks of the employed is believed to have been good both for them and for the more efficient. In practice, New Zealand's system of compulsory arbitration has secured for many of the sweating trades wages and hours determined by judicial decree, and in the opinion of many persons the results of this method are even superior to those of Victoria's wage boards. The essential characteristics of both are that considerations of social expediency and general good are substituted for blind competition as the regulators of conditions of employment, and standards are fixed which insure to those who can obtain employment living wages and reasonable hours. The inefficient, who are "unemployable" under the new conditions, become objects for public charity, and experience seems to prove that the whole cost of their maintenance is less of a tax on the social organism than was their competition when they were allowed to partly maintain themselves.

Conclusion

Both New Zealand's and Victoria's plans for solving the sweat-shop problem are dismissed as too radical by English and American students of the evil. The further remedies that are advocated for the sweating system as it exists in the United States are additional restrictions on immigration, more rigid sanitary regulations, and a provision that all garments made in tenement houses shall bear a "tenement-made" label as a warning to consumers that they are buying sweaters' products.

There is little question but that these changes in the law, coupled with provisions for more rigid enforcement, would cause improvement, but it is doubtful whether the evil can be corrected by such simple means. It is too soon to pronounce the Australian plan of establishing minimum wage rates by public boards or tribunals a success, but in the opinion of many persons only some such remedy, which goes to the root of the difficulty, can fully correct the evils of the system.

The Regulation of Dangerous Trades

§ 243. Besides the sweating trades there are others which require special regulation on the ground that they are dangerous to life or health. All manufacturing industries which use power machinery are dangerous to a certain extent, and experience has taught the wisdom of requiring that revolving machinery be fenced and that the cleaning of machines while in motion be either prohibited altogether or limited to adult workmen. In addition to these general regulations, which are now included in the factory laws of all progressive countries, experience has shown the need of special restrictions on particular trades. Occupations connected with the cleaning of textile fabrics and the polishing of metals are peculiarly unhealthful, as are also those concerned with the manufacture of white lead and of most chemicals. In the transporting and mining industries the rate of mortality is very great and can only be kept down by legal interference, since even such simple appliances as safety lamps and automatic couplers are introduced but slowly by employers unless their use is made obligatory.

System in Great Britain

Great Britain has gone much further than any of the States of the United States towards the adequate regulation of dangerous trades. The present system of that country is to vest large discretionary powers in reference to the control of dangerous trades in the Home Secretary. Medical practitioners are required to report illness which they believe to be due to unhealthful conditions of employment to the factory inspector, and the latter, as soon as he becomes persuaded that a trade is dangerous and in need of special regulation, is required to bring the matter to the attention of the Home Secretary. That officer, if he deems it necessary, drafts, with the assistance of experts, rules calculated to meet the needs of the situation and sends copies of them to the employers who will be affected, with the request

that they file their objections to them within twenty-one days. These are carefully considered, and revised rules are then issued which have the force of law unless vetoed by either House of Parliament. This system has the great merit of adapting itself readily to changing conditions, and might with advantage be copied in its important features in the United States.

Employers' Liability

§ 244. No matter how rigid the regulations in reference to dangerous trades, accidents to employees resulting in temporary or permanent disability, or even death, are certain to occur. Under the common law of negligence as interpreted by English and American courts, employers are liable for damages when accidents are due to their personal negligence. When, however, an accident is due to unpreventable causes or to the carelessness of the employee himself or one of his fellow employees, no liability attaches to the employer. In such cases, unless damages can be collected from the fellow employee responsible, the entire loss must be borne by the unfortunate victim of the accident and his family. The impolicy and injustice of this arrangement have long been appreciated, and have led to the modification of the law of employers' liability in several different directions.

In the United States

In the United States all that has thus far been done has been to extend the employer's liability to cases in which accidents are due to the carelessness of his representatives. Thus by the Employers' Liability Law adopted by New York in 1902, the employer is responsible for any accident to an employee, "himself in the exercise of due care and diligence at the time," due to any defect in the condition of the ways, works, or machinery used in the business traceable to the negligence of employees responsible for the care of such ways, works or machinery, or to the negligence of an authorised superintendent of the employer. For accidents due to the negligence of employees of the same or of an inferior grade to the victim, employers would not, under this act, be liable.

The Workmen's Compensation Act of Great Britain

A similar law to that of New York was adopted by Great Britain as early as 1880, but was found insufficient as a remedy. At the instance of Mr. Joseph Chamberlain, an entirely new policy, known as that of "workmen's compensation," was introduced through an act passed in 1897. By this measure, which

applies to all of the large-scale industries of the country, employers are required to compensate, according to a fixed scale, workmen or their families for accidents sustained in connection with their employments and resulting in at least two weeks' disability, unless such accidents were due to the "serious and wilful misconduct of the workman himself." The amount of compensation is limited to £1 a week in case of temporary disability and £300 in case of complete disability or death, and simple machinery is provided for determining, without recourse to a court, what part of these sums should be paid in any given case. In defending this law, Mr. Chamberlain insisted that it is not true, as economists are fond of assuming, that wages in dangerous trades are enough higher than those in other trades to compensate workmen for the risks they take. Even if it were true, it might be added, the difference would not compensate the particular workman who was injured unless some plan of mutual insurance had been adopted by which the extra compensation was placed in a common purse for the benefit of those upon whom accidents might fall. The only way to equalise conditions between safe and dangerous trades, Mr. Chamberlain urged, was to throw the burden for compensation for accidents upon the employer, who would, in turn, throw it upon the consumer by charging somewhat higher prices for his goods. "When you enter upon a business," he said to employers, "you must consider this compensation as much a trade charge as is now the provision which you are called upon to make for the repair of machinery. You at present have to put aside every year a certain sum for the repair of the inert machinery, which is a factor in your business. Now, the human element in the business has to be considered, and in case of accident what reparation you can make must be made as a charge upon the business." The active opposition which the act at first encountered appears to have given place to passive acceptance of it on the grounds given by its author. Employers have been able to transfer to industrial insurance companies their liability for compensation under it, and thus accident insurance has come in Great Britain to be as normal an item among the expenses of production as was fire insurance before the Workmen's Compensation Act was passed. The principal

objections to the plan that are now urged are that it does not extend to small employers and that the scale of compensation is too moderate.

Continental Systems

Schemes of industrial insurance similar to the Workmen's Compensation Act described are now well-nigh universal in European countries. Perhaps the most elaborate is the compulsory insurance system of Germany, under which employers, employees, and the Government all contribute to the insurance fund out of which compensation is paid to workmen in case of accident or illness. The principal objection to be urged against this plan is that the cost of its administration is out of proportion to the benefits which result from it, but this may easily be exaggerated through failure to appreciate the saving in the cost of administering public and private charities that may properly be credited to such a comprehensive system of industrial insurance.

Backwardness of the United States in this Field

In the field of industrial insurance, as in other fields, European precedents have had little weight in the United States, where there is still a strong prejudice in favour of self-dependence in all such matters. It is argued that each individual should accept the risks of his special occupation or insure himself against them through private industrial insurance companies, and that only in this way can the spirit of self-help and self-reliance, upon which our advancing civilisation so largely depends, be kept alive. The obvious reply to this reasoning is that in practice workmen underestimate the risks to which they are exposed and fail to insure themselves against them. The consequence is that when accidents befall them their families are only too apt to be left without adequate provision and to become dependents upon public or private charity. In the opinion of the author a plan by which compensation for industrial accidents is made one of the conditions of the labour contract tends on the whole to promote self-reliance and independence among the working classes rather than otherwise, because it reduces the amount of enforced dependency. Whether this view or the one commonly accepted in the United States is correct can only be determined by experience, and for this reason the results of the experiments now in progress in Europe should be watched with interest.

Arguments for and against the Legal Regulation of Labour

§ 245. The subject of the legal regulation of labour is one of great complexity. Up to the present time *à priori* objections to such regulations have delayed their introduction, and only gradually, as experience has demonstrated their usefulness, have they been extended to situations which seem to require them. In Great Britain and the United States the notion that the legislative power should not be used to regulate hours and conditions of employment has been abandoned by most thoughtful persons, but the prejudice against any interference with wages, like that practised in New Zealand and other Australian states, remains nearly as strong as ever. There is, of course, good ground for this distinction. Hours and other conditions of employment affect directly the health and vigour of the working classes, wages only indirectly. Moreover, workmen are less mindful of their own interests in connection with hours and sanitary arrangements than in connection with wages. Making all allowance for these considerations, many thoughtful persons still believe that, under certain circumstances, notably those found in connection with the sweating system, the regulation of wages must also be undertaken by the Government if serious evils are to be corrected. It is sometimes argued that the law cannot fix the rate of wages, but this is contrary both to reason and experience. The law cannot fix both wages and the number of persons who shall be employed at those wages, but it can declare that no one shall be employed in given trades unless paid certain minimum wages, and enforce its decree. The result may be an addition to the number of dependents who are "unemployable" at the wages fixed because too inefficient to earn them, but it may be better and cheaper for society to support such persons in almshouses than to permit their competition to hold the wages of great sections of the population down to a starvation level. In order to mark off the dependent from other classes the state may find it necessary itself to fix a standard by which the ability of the individual for independent self-support may be determined. Without desiring to advocate the establishment by law of standard or minimum rates of wages for the sweating trades, the author wishes to insist that there would be nothing in this policy inconsistent with the theory of wages that has

been explained in these pages, and that it merits the same unprejudiced consideration as is now accorded by intelligent people to proposals for restricting the employment of children or women, or for requiring the use of safety appliances in connection with dangerous trades.

Need of Uniformity in the United States

In the United States a serious obstacle to the progress of labour legislation has been the inability of State legislatures to agree upon uniform laws. Massachusetts has held an honourable place as a leader in factory legislation, but of late years proposals for a further restriction of hours have been met there with the objection that the cotton mills of the State were already carrying on a losing battle against the cotton mills of the South, which are free from all but the mildest labour restrictions. Exaggerated as this objection often is it points to the need of uniform labour laws, at least for neighbouring States, and suggests the desirability of national labour legislation. Massachusetts, the State which from its position of leadership has most keenly felt the absence of uniformity, adopted, in 1902, a concurrent resolution favouring an amendment to the United States Constitution which should empower Congress to enact uniform labour laws for the whole country. Another movement in the same direction was the creation, in 1883, of the Association of Officials of Bureaus of Labour of America, which has worked earnestly to secure uniformity in the factory regulations of the different States. The progress towards uniformity that has been made encourages the hope that its absence may be less of a bar to improved labour regulations in the future than it has been in the past.

The Future

The legal regulation of labour, which was scarcely begun in the United States prior to the Civil War, has now become one of the most important functions of the State governments. Departments of factory inspection and bureaus of labour statistics have been created by all of the States in which manufacturing is an important industry, and the annual and special reports of these bodies afford voluminous information in regard to the labour conditions which require regulation. Not a year passes that some of the States do not, on the basis of this information, add important provisions to their codes of labour law and that the machinery for enforcing these codes is not

improved. Although much remains to be done, there is perhaps no field of legislation in which progress may be so confidently expected in future years, nor in which the results are likely to be more generally beneficial.

REFERENCES FOR COLLATERAL READING

The literature bearing on labour regulations is of a somewhat technical character. **Stimson*, Handbook to the Labour Laws, is the standard work for the United States. More exhaustive is the Report of the United States Department of Labour on Labour Laws in the United States (Second Special Report, 1892), which is brought down to date by the Bulletins of Labour of the same Department. Volumes V. and XVI. of the Report of the United States Industrial Commission contain digests of the labour laws of the United States and of foreign countries. Discussions of the history and effects of labour legislation will be found in *North*, Factory Legislation in New England (against) and *Whittelsey*, Massachusetts Labour Legislation (for). A good statement of the arguments for child labour laws is given in **Murphy*, The Case against Child Labour, and The South and her Children. Other references are given in **Marot*, A Handbook of Labour Literature.

The history of labour-legislation in Great Britain is treated in **Von Plener*, English Factory Legislation (1876), and **Hutchins* and *Harrison*, A History of Factory Legislation (1903). The laws now in force are given in *Abraham* and *Davies*, The Factory Acts. A good statement of the arguments for labour laws is given in **Mrs. Webb*, The Case for the Factory Acts.

The subject of industrial insurance is treated fully in **Willoughby*, Workingmen's Insurance, and the Report of the New York Bureau of Labour Statistics for 1899.

CHAPTER XXIII

LEGAL AND NATURAL MONOPOLIES

Importance of the Monopoly Problem

§ 246. As explained in Chapter XI. the essence of monopoly is such control over the supply of an economic good as enables the monopolist to regulate its price. In Chapter XXI. we considered cases of such control exercised by trade unions and designed to enhance wages, or the price of labour. Much more common and also more menacing to general well-being are monopolies which consist in control over the supplies of commodities. Such monopolies have it in their power in greater or less degree to compel the public to pay regularly and continuously for the commodities they control higher prices than are needed to cover the expenses of their production, including a fair wages of management. This power is not unlike the power to tax which is exercised by the state itself. By its means the favoured few who control monopolistic enterprises derive monopoly profits at the expense of the many. The magnitude of these profits, which under a system of free, all-sided competition would be diffused throughout the community in the form of cheaper commodities, is one circumstance that lends an interest to the monopoly problem. Another and equally important circumstance is the manifest injustice involved in permitting a few persons to enjoy incomes from which the many are debarred. For these and other reasons the monopoly problem is one of the most important practical questions with which economics has to deal. In the following sections the principal types of monopolies that are found in the United States, the grounds on which they rest, and the efforts that have been made to regulate and control them, are considered. Legal monopolies, as the simplest type, first merit attention.

Public Legal Monopolies

§ 247. Legal monopolies, as already stated, may be either public or private. Public legal monopolies embrace not merely public businesses of monopolistic character, but public services

which the state alone can render, such as the granting of patents, copyrights, licenses, and divorces, the registration of mortgages, wills, and other legal papers, the incorporation of companies with limited liability, etc. The latter are a convenient means of legal control of the relations which they affect and are common to all civilised countries. In the United States they are rendered as a rule by State, county, or municipal governments, with the result that the greatest diversity of practice with reference to them prevails in different sections. Usually the charges for such services are made just high enough to cover the expense which they entail, and in consequence they are not a source of monopoly profit. Exceptions to this statement are the charges for liquor licenses and for the incorporation of companies, which are important sources of public revenue.

Purposes of Such Monopolies

The direction and management of different branches of business have been assumed by states for a variety of reasons. In Norway, moral considerations have led the Government to convert the liquor business into a public legal monopoly. The tobacco monopoly of France and the salt monopoly of Saxony are conducted for revenue. In Prussia the state has taken charge of the railway business, partly for revenue, but chiefly to insure reasonable and uniform rates to all shippers and ready control of transportation facilities in time of war or other public emergency. The chief public legal monopoly in the United States, the post-office, was undertaken with a view to facilitating and cheapening communication between different sections of the country, and these objects have always been made more prominent than considerations of revenue. In fact it may be doubted whether at the present time desire for revenue would be accepted in any Western country having a representative government as an adequate reason for making a business a public legal monopoly. In the United States, especially, public opinion is decidedly opposed to public monopolies managed merely for profit. The most common reason for advocating and defending public legal monopolies is that the businesses under consideration require special regulation in the interest of public morals, as in the case of the liquor business, or that they are natural monopolies in which the public

has a vital interest and that public ownership and operation offer the only satisfactory means of adequate control.

The United States Post-office

The United States Post-office is a good example of a public legal monopoly which renders more efficient service than a private business organised for profit could possibly do. The two aspects in which its policy differs strikingly from that of businesses organised for private ends are that it undertakes, regardless of cost, to bring the mails within the easy reach of every inhabitant of the country, and that its charge for carrying mail matter is the same to all its patrons and invariable, irrespective of the distance within the country to be traversed. The educational and commercial value of these departures from ordinary business policy could not easily be exaggerated. Even if it could be proved that certain services, such as carrying the mails between the large centres of population, could be performed more cheaply if the business were in private hands, the advantage would still lie, in the opinion of most thoughtful persons, with the public monopoly. So general, in fact, is the approval of the Federal Post-office in the United States that its success is commonly made the point of departure for arguments in favour of the public ownership and operation of a telegraph monopoly, a telephone monopoly, and even a railroad monopoly. Opponents of the latter, on their side, rarely take exception to the statement that the post-office has worked admirably, but confine themselves to pointing out the respects in which the telegraph, telephone, and railway businesses differ from that of carrying the mails, and concluding that the argument from similarity is fallacious. The arguments for and against the policy of making such businesses public legal monopolies are considered in the next chapter.

Private Legal Monopolies in Great Britain

§ 248. The development of private legal monopolies presents one of the most interesting chapters in the history of English law. Reference has already been made to the prevalence of such monopolies in the days of Elizabeth and the first Stuarts. In 1602 in the case of *Darcy vs. Allen,* an English court declared a patent granting the exclusive right to manufacture playing cards for a period of twenty-one years unlawful. The Court held that, "All trades, as well mechanical as others, which prevent idleness (the bane of the Commonwealth) and

exercise men and youth in labour for the maintenance of themselves and their families, and for the increase in their substance to serve the Queen when occasion shall require, are profitable for the Commonwealth; and therefore the grant to the plaintiff is against the common law and the benefit and the liberty of the subject." Notwithstanding this decision grants of monopolies continued to be made, and this led Parliament to intervene with the comprehensive Statute of Monopolies in 1624, which provided: "That all monopolies, and all commissions, grants, licenses, charters, letters patent, heretofore made or granted or benefits to be made or granted to any person or persons, bodies politic or corporate whatsoever, of or for the sole buying, selling, making, or using of anything within this realm, or the dominion of Wales, or of any other monopolies . . . are altogether contrary to the laws of this realm, and so are and shall be utterly void and of none effect and in no wise to be put in use or execution." Exceptions were made of patents for new industries or inventions, which might be granted for twenty-one years, and of patents for new processes, which were limited to fourteen years. The monopolies of foreign trading companies were also exempted from the Act, as were the businesses of printing, of manufacturing saltpetre, gunpowder, ordnance, and shot, and of alum mining. By later acts all of these exceptions were removed, except those in favour of patents for new inventions and copyrights for literary and artistic productions.

In the United States

When the Constitution of the United States was adopted, the doctrine which had become firmly established in England that monopolies, in the sense of exclusive grants, are abhorrent to the common law, was accepted as a fundamental principle. Congress was given power* to "promote the progress of science and useful arts by securing, for limited times, to authors and inventors exclusive rights to their respective writings and discoveries," but it was not given power to grant monopolies for other purposes, and the courts have uniformly held that it has no such power. They have been equally unanimous in denying any such power to State legislatures, except in connection with the grant for the public benefit, of special franchises to

* Article I., Section VIII., of the Federal Constitution.

public-service corporations such as street-railway, gas, and electric-lighting companies. It follows from these decisions that private legal monopolies can exist in the United States only under the protection of the patent or copyright laws or under grants, in the nature of special franchises, from the State legislatures, or their agents, municipal councils.

The Patent System

§ 249. Under the patent law now in force in the United States, "any person, native or foreign, who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used in this country, and not patented or described in any publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may upon payment of the fees required by law and other due proceedings had, obtain a patent therefor." The Patent Office is a branch of the Department of the Interior. It employs over a hundred trained examiners, whose business it is to study the specifications submitted and satisfy themselves that the invention or discovery for which a patent is sought falls within the requirements of the law. A patent gives to the inventor the sole right to manufacture and sell his invention for seventeen years, unless it has been previously patented abroad, when the United States patent expires with that granted by the foreign country. In Great Britain the life of a patent is shorter, being only fourteen years, but under certain conditions it may be renewed for seven or even fourteen years longer, so the practical difference between the two countries is not great.

Arguments for and against Patents

Three different arguments are advanced in favour of granting patents. The usual American argument is that they foster invention and discovery by insuring to the inventor adequate reward for his trouble. In England a common argument is that they induce inventors to make their discoveries public. A third argument which applies to the more complex inventions of recent years is that but for the protection which a patent affords, capitalists would be unwilling to risk their means in the development of new processes. There is doubtless reason in each one of these contentions and together they are usually

accepted as sufficient justification for some kind of a patent policy. The present patent system of the United States is, however, criticised on several grounds: (1) Some people deny that men who have a genius for invention and discovery require any special inducement to follow their natural bent. (2) Others point out that in practice those who reap the rewards of monopoly under our patent laws are more often business men and corporations, who acquire control of patents and turn them to commercial account, than the inventors themselves. (3) It is urged that important inventions and discoveries are the joint product of many minds and that to unduly reward the lucky individual who gets first to the patent office is to disregard the services of other investigators. (4) It is maintained that a large proportion of the patents taken out are suppressed by those who have vested interests to protect and that in consequence, instead of promoting progress, our patent law actually retards it. (5) The fact that the present rapid progress in methods of production renders most processes and methods obsolete before they have been in use seventeen years is emphasised, and it is asserted that for this reason improved processes are usually of little value to the public when the patents on them expire.

Objections Answered

In answer to the first of these objections it may be asserted that while genius needs, perhaps, no incentive to follow its natural bent, talent does, and that the great majority of inventions and discoveries have been made not as strokes of genius, but by laborious study and experiment. Under these circumstances it can hardly be granted that inventors and discoverers are not influenced like other people by the expectation of financial return. To the second point it may be answered that in many cases making an invention commercially successful is as important a service as making the invention. For example, it would be difficult to decide in the case of the steam engine whether Watt or his business partner, Boulton, deserved most credit for the ultimate result. But for Boulton, Watt would almost certainly have died a broken-hearted "visionary" and his experiments with steam would be remembered only by antiquarians. Nor is it true that any large proportion of inventors fail to get some return for their inventions when the

latter prove to be commercially successful. They are apt to be men who are carried away by one success and who squander all they receive from one invention in the vain effort to impress upon the public the value of others. A patent law which would make all successful inventors die rich would need to modify human nature. The third criticism overlooks the real justification of a patent policy. No scheme could be devised that would reward inventors in proportion to their merits. All that can be done is to offer them a special stimulus, and this the present law does by giving the reward to him whose application for a patent is first received.

Proposed Reforms in the Patent System

The fourth and fifth objections point to two definite weaknesses in the present patent law of the United States: it permits the suppression of inventions, and it grants a monopoly for the same rather long period of years to all inventors, irrespective of the character of their inventions or the use to which they are put. It is easier to recognise these defects than to suggest satisfactory remedies. To cure the first, it has been proposed that the law require proof from the patentee that some use, which benefits the public, is being made of his patent within three or four years of the time when it is taken out, and that in the absence of such proof the patent be revoked. This plan has been tried in other countries and found to work satisfactorily. Various remedies have been suggested for the second defect. The Government might reserve the right to buy up a patent at an appraised valuation, whenever this course seemed expedient. A decisive objection to this plan is that under our form of government there is little reason to think that such a right would ever be exercised. Another plan is to compel those owning patents to share them with others on payment of a fair rental or royalty. The difficulty here would be to determine what a "fair" return might be. A third plan is to impose a progressive tax on patents, increasing year by year, with the provision that failure to pay the tax would work forfeiture of the patent right. Finally, it has been proposed to reduce the term for which patents are granted, from seventeen to ten years and to follow England in permitting renewals for five or ten years in cases where the public interest seems to require it. The last plan has the advantage of simplicity. It also meets

more fully than any other single change proposed the objections urged against the present system, without itself being open to serious objection.

Patents as a Source of Monopoly Profits

Patents in the United States are the direct and indirect cause of large monopoly profits. Some of the more successful, such as the Bell telephone patent, have earned large fortunes for hundreds of different people and helped to build up monopolies which, unless controlled as regards their methods of doing business and rates of charge, will continue, long after the patents have expired, to yield large monopoly returns. Moreover patents have become so numerous of late years, being now issued at the rate of 26,000 a year (1900), that they figure in nearly every branch of manufacturing enterprise. Nearly every one of the trusts organised in 1898 and 1899 controlled a larger or smaller number of patents and in the case of some of them, such as the bicycle trust, the fact that all important patents were owned by the combination was urged as one of the surest grounds for its expected success. Important as are patents as a source of monopoly income, however, it would be easy to exaggerate the extent to which they lead to the suppression of competition. A large number of them are for the protection of rival processes and serve to stimulate rather than to diminish competition between those employing the different methods. Only when a patented process is distinctly superior to all other known processes for effecting the same result does it give rise to an exclusive monopoly, and even such monopoly is subject, of course, to the limitations which have been already discussed.

Registered Labels and Trade Marks

Besides granting patents, the United States Patent Office registers labels and trade-marks on receipt of a modest fee. The latter have been of importance chiefly in giving a solid basis to what is known as the "good will" of a business. A manufacturer who acquires a reputation because of the quality of his products may adopt a trade-mark to distinguish them from others. In the organisation of trusts, brands and trade-marks have been frequently recognised as among the valuable assets of the businesses to be absorbed.

The System of Copyright

§ 250. The basis of copyright, "the exclusive right to multiply for sale copies of works of literature or art," is similar

to that of patent right, and the reasons for it are even more obvious. The introduction of copyright in Europe followed soon after the invention of printing, but the first general English law on the subject was not enacted until 1710. At present copyright in England covers the life of the author and a period of seven years after his death, with the proviso that the total period of monopoly is not to exceed forty-two years. Copyright was common in the United States before the adoption of the Federal Constitution. The first national copyright law was passed in 1790 and resembled closely the English statute of 1710. It was amended several times and finally superseded by the general Act of 1870. The period for a copyright in the United States is twenty-eight years, but the author or his direct heirs have the privilege of securing a renewal for fourteen years more, so that the total period is forty-two years as in England. In comparison with the laws of other countries these provisions are none too liberal. In Mexico copyright is perpetual. In Spain it continues eighty years after an author's death, in France fifty years, and in Germany thirty years.

Defects in American Law

Although the copyright law grants a monopoly for a longer period than the patent law, little if any fault is found with it because the monopoly is of such a limited character. Even with this protection, authors and artists as a class are far from enjoying excessive incomes and those who succeed in obtaining large monopoly profits from their products serve as a needed incentive to the great army who find it difficult to make even a living from their work. Instead of being criticised for being too liberal in its provisions, the American copyright law is attacked because it does not extend the same protection within the United States to the works of foreign authors and artists which the latter enjoy at home. A discussion of this objection would carry us too far from the subject of monopolies and monopoly profits, but it certainly seems anomalous for a country which protects nearly all industries which require it, to allow its authors and artists to be subjected to the competition of pirated editions and copies of the works of foreigners. The provisions of the Act of 1891, granting to foreigners on reciprocal terms the privilege of securing copyrights in the United States by having their books printed simultaneously in

this country, remedies the evil only for the works of authors of established reputation.

Natural Monopolies in the United States

§ 251. Of all forms of monopolies those which are most widespread in the United States are what we have styled natural monopolies. Under this head are included monopolies of situation, such as the anthracite-coal combination, and monopolies of organisation, such as municipal gas, electric lighting, and street-railway companies, telegraph, telephone, express, and railway companies, and, in fact, all transportation industries except those which use the free public streets or free public waterways and enjoy no advantage over other patrons of the same facilities. The importance of these businesses scarcely needs to be emphasised. The anthracite coal strike of 1902 demonstrated conclusively the country's dependence upon that commodity. Its dependence upon monopolies of organisation is even more pronounced. As industry is now organised the services rendered by transportation companies are indispensable to the business success of nine-tenths of the entrepreneurs in every community. Water, gas, or electric light, and street-railway transportation have become necessaries of life to dwellers in cities. Quite as important is steam-railroad transportation. Without it farmers and manufacturers would be deprived in large measure of the markets for their goods and compelled to turn their attention to production for the satisfaction of their own wants or to supply the restricted local markets that could be reached through other means of transportation. The conviction that the transportation businesses enumerated are not adequately regulated by competition is only gradually taking shape in the public consciousness. For this reason a good deal of attention is given in the following sections to the explanation of the circumstances which make these businesses natural monopolies and therefore proper objects of legal regulation and control.

Natural Monopolies of Situation

§ 252. Among natural monopolies of situation are included unique mineral springs, like those that have made famous Carlsbad in Austria and Saratoga in the United States, and a host of other minor monopolistic enterprises. It may be questioned whether any out-and-out natural monopoly of situation that is of national importance has yet been perfected in the

United States. The combination between the producers and carriers of anthracite coal in Pennsylvania has, however, reached a point at which it presents many of the characteristics of monopoly, and a description of it seems not out of place in this connection.

The Anthracite-coal Combination

The anthracite-coal combination has been rendered possible by the limited area within which anthracite coal is found in the United States. The whole field is only 496 square miles in extent and fully nine-tenths of the product comes from the five Pennsylvania counties located near the head waters of the Schuylkill and Lehigh rivers. Into this limited territory nine railroads have extended their lines and now serve, with the canals which they control, as the sole means of transporting the product from the mines to the country's centres of population. As long ago as 1871 the railroads, under the leadership of the Reading, adopted the policy of buying up coal lands with a view to securing an assured share of the coal traffic. It has taken them many years to acquire control of the industry and to agree among themselves as to the manner in which it should be conducted. First, it was necessary for them to enter into traffic agreements among themselves that would prevent independents from securing discriminating rates on the basis of which they might undersell the railroad coal companies. This being accomplished, the next step was to raise freight rates to a point that would make the coal business relatively unprofitable to independent producers and induce them to sell out to the railroads on moderate terms. The same rates were charged railroad and independent coal companies and this made it difficult for the latter to prove that they were being treated unfairly, although it was obvious that from the point of view of the railroads it was immaterial that their collieries were making small profits so long as they themselves were prospering. As a result of these policies the coal holdings of the railroads were year by year extended at the same time that their conflicting interests were gradually, through consolidations and community of interests arangements, brought into greater harmony. When the anthracite miners' strike of 1900 was declared (September 17), conditions were ripe for a few final moves in the game of combination. In December of that year, J. P.

Morgan & Co. negotiated, for the Erie Railroad, the purchase of the Pennsylvania Coal Company, one of the largest and most successful of the independent producers, and in this way defeated a project for building an independent road from the coal region to tide-water. In January, 1901, the Central Railroad of New Jersey was purchased through the same influence and turned over to the Reading Railroad. The effectiveness of these changes in consolidating the monopoly was shown by the fact that the higher price for anthracite coal, which was the natural consequence of the strike of 1900, was continued and even increased in 1901 and 1902, to the profit of the railroads. According to a reliable estimate the railroads controlled in 1901 some 96 per cent. of the anthracite deposits and actually owned over 90 per cent. The dependence of the individual operators who remain in the field upon the coal roads for access to the markets insures in ordinary times their acceptance of any agreements which the managers of the latter may enter into for the common benefit.

Its Present Status

At the present time, July, 1903, there is every indication that the anthracite-coal combination enjoys complete control over the supply of that commodity and that its price-making power is limited only as is that of every monopoly by the presence of other commodities, such as bituminous coal, petroleum, and gas, which may be substituted for its product. The monopoly is no less real because the only bond which holds the road together is a " gentlemen's agreement " which could not be enforced in a court of law. As long as the agreement is adhered to, the effect is the same as though all the roads were owned by a single corporation. The competition between anthracite coal and the substitute articles mentioned is now so close for several important uses that it acts as an efficient check on the rapacity of the combination. It did not prevent, however, as already suggested, higher prices for anthracite coal during 1901 and 1902 than had been known for several years, nor did it prevent the general prosperity of those years from showing itself in an increased consumption of that commodity in spite of the higher prices. The result was a larger margin of profit on a larger output for the railroads interested in the combination and their stockholders.

Need of Regulation

Opinion is divided as to whether in future years the opportunity open to consumers to substitute other articles for anthracite coal will serve as a sufficient check on this monopoly or whether legal interference will be necessary if the interests of the public are to be protected. There seems to be some ground for thinking that briquettes of bituminous coal may come into use in place of anthracite for ordinary domestic consumption in the near future, and that the monopoly is now near the height of its prosperity. Should this view prove correct, legal interference will be unnecessary. Without attempting to prophesy we may lay it down as a general principle that the Government has not only the right, but the duty, to regulate a natural monopoly like the anthracite-coal combination when it appears that such a business is taking advantage of its position to charge exorbitant prices for the commodity it controls.

Other Monopolies of Situation

Some of the more important industrial combinations, such as the Standard Oil Company and the United States Steel Corporation, have undertaken to acquire control of the sources of supply of the raw materials they use. In neither case has this development gone far enough to justify the characterisation of these businesses as natural monopolies of situation, but that their managers are consciously directing them towards this goal seems apparent. The future alone can tell whether the sources of supply of such widely distributed materials as petroleum, iron ore, and coking coal can actually be controlled by single corporations. To the extent that they may be, the trusts referred to may become natural monopolies of situation instead of mere capitalistic monopolies.

Natural Monopolies of Organisation

§ 253. The second class of natural monopolies embraces all businesses whose expenses of production show a steady tendency to fall as the size of the business grows. Between such businesses competition can have but one result, combination, and monopoly once established can maintain itself indefinitely because it can conduct its large-scale operations more cheaply, and therefore sell more cheaply, than any small-scale competitor that may be tempted into the field.

The Business of Supplying Water

The transportation and delivery of water to each house in a city is a business of this kind. It is too obvious to require discussion that one company having one large supply pipe and

smaller individual pipes for each house can supply water to a single street more economically than two or more competing companies. It is almost equally obvious that one company can supply the water for several adjacent streets more cheaply than competing companies each having a street to itself. In order to pump and store water economically it is necessary to do it on a larger scale than is open to a water company which supplies houses on a single street. As regards this part of the business, economical production requires that the whole of a city of less than 500,000 inhabitants should be supplied by one company and that proportionately large sections of larger cities should be so supplied. Under certain circumstances the tendency towards consolidation in this business in a great city may be checked when each of several water companies secures a monopoly of the business of supplying water in a particular section. This is practically the situation in London at the present time, although there are clear indications that further consolidation there would result in more satisfactory if not in cheaper service. The disadvantages of such a division of territory between different companies are: (1) No one of them is in a position to carry through the enormously expensive engineering feats which come to be necessary as a city grows and by its growth pollutes or renders inadequate the more adjacent sources of water supply. (2) When some unexpected occurrence cuts off the source of supply of one of the companies its customers are subjected to the inconvenience and even danger of a water famine. A large company can afford to maintain storage reservoirs to tide it over such periods. (3) The smaller companies cannot afford to have as heads of their departments as able men as the large company can afford to employ. The situation in regard to the water business is briefly then as follows: One company must have a monopoly of the business for each street in order to render the service with anything approaching economy. It will render more economical service if its monopoly embraces the entire city, if the latter be small, or a considerable section of the city, if it be large, and consolidation is sure to bring the business to this stage of development if it is allowed to grow as its nature demands. Finally, if quality and continuity as well as expense

of service are considered, it will be most satisfactory if the monopoly is allowed to embrace the whole of even the largest city and if not even the semblance of competition is maintained.

The Gas and Electric Light Monopolies

Quite similar to the case of a water company are the cases of gas and electric-lighting companies. They also use main supply pipes or wires and must control all the business in a large section of a city in order to be conducted most economically. Moreover, for them the consideration in regard to the grade of intelligence that can be employed as the company expands is of the utmost importance because their businesses are more complex. Few familiar with these businesses deny that they are natural monopolies in the same sense as the water business, or think that competition can regulate them, except that indirect competition which consumers themselves set up between gas, electricity, and petroleum as means of lighting dwellings. When, as is frequently the case, the same set of men control the municipal gas monopoly and the electric-light monopoly, even this competition becomes a rather unreliable dependence.

The Street-Railway Monopoly

§254. The street-railway business has many features in common with the businesses just described. A street-railway company must also have a monopoly at least of the single street on which its cars run, partly because of the useless duplication of plant that would result if a rival company were maintained, and partly because of the physical limitations of the street itself which makes even one set of tracks a serious inconvenience to the public. Rival companies may be chartered to run cars on adjacent streets, however, and this was the usual first step in the history of the relations between municipalities and street-railway companies in the United States. For a time companies operating parallel lines may compete, but their competition, as experience has demonstrated over and over again, always ends in consolidation. Each company has to have its full equipment of tracks, feed barns or power houses, cars, etc., and the most expensive of these items stand as fixed and necessary charges, irrespective of the volume of business which the company handles. Suppose that two rival companies begin by halving the business for the section of the city which they serve. If their tracks are but a square apart a very slight ad-

vantage in favour of either will divert to it passengers from the other. This consideration may lead one to lower its fares; but this is a game at which two can play with about equal success and its sure consequence is loss of profits for both competitors. Realisation of this fact comes quickly and causes a first step towards consolidation, an agreement as to rates of fare.*

Reasons for Combination

But there are other ways in which passengers may be attracted from a rival line. If the companies start as horse-car lines, as did the street-railway companies of all the older cities of the United States, superior management will show itself in quicker service. Every passenger drawn to the better line will add nearly his entire fare to its profit account—since the fixed charges are relatively so large and the running expenses, which alone increase with the number of passengers carried, relatively so small—and will, for the same reason, deduct nearly his entire fare from the profit account of the rival company. The successful competitor has thus a larger and larger profit fund with which to improve still further the quality of its service, while the other company is forced by falling profits to enter upon a policy of retrenchment and economy which will drive away still more of its customers. The inferior company may struggle on and pay small dividends as long as both lines use the same sort of power, but the introduction of the cable or trolley system by the superior line is likely to draw away so many of the passengers of the other that it is driven into bankruptcy—or consolidation with its rival. This in brief is the story of the street-railway business in the cities of the United States. Its chapters have become so familiar to street-railway managers that they now usually take a short cut to consolidation as soon as a rival company is chartered to run on streets parallel to their own lines. Only in case the organisers of the new company demand too high terms is the experiment of competition actually tried and the question decided, as

* In Philadelphia a Board of Presidents of City Railways was formed as early as May 24, 1859, barely two years after the first line was built, and such a board continued to fix rates of fare for the whole city until all the important lines were merged in the Union Traction Company in 1895. During all that time there was only once, and then only for a brief interval, any competition in regard to rates of fare.

in the mediæval trial by combat, which contestant is to absorb the life of the other.

Advantages of Combination

The advantages of consolidation in the street-railway business are similar to those enumerated in connection with other natural monopolies. (1) The fixed plant may be more fully and more economically utilised. Thus, cars may be run only over the streets that are most conveniently situated for traffic, power stations may be placed more advantageously, and the rolling stock may be better adapted to the tastes of different classes of patrons, new cars being used on fashionable streets and old equipment worn out where it will excite least criticism. (2) Superior ability may be employed in each department and specialisation may be carried further. (3) Improved appliances may be experimented with and introduced more readily than by smaller competing companies with proportionately less capital. As regards the street railway, then, as regards the businesses of supplying water, gas, or electricity, the conclusion seems to be justified by theory and confirmed by experience that monopoly is the natural, inevitable and economically desirable form of organisation.

The Telephone Monopoly

§ 255. The next most important municipal monopoly, the telephone business, owes its form of organisation to somewhat different circumstances. Unlike the business just described it is not subject to the law of decreasing expense. On the contrary electrical engineers maintain, and with apparent reason, that the larger the number of subscribers served through one exchange the larger is the expense per subscriber of rendering the service. This is because the exchange stations must be so arranged that each new subscriber—or pair or quartette of subscribers where two or four party lines are used—may have his wire connected readily by each of the many operators required in a large office with that of any other subscriber. If one operator is able to attend to the calls of fifty subscribers and the office serves one thousand, this necessitates twenty different terminals at the exchange for each wire. If the number of subscribers doubles, each separate wire must be let in at forty points. If five thousand subscribers are to be served, each wire must have one hundred distinct terminals. In this way the expense at the central office increases by multi-

plication rather than by addition. For five thousand subscribers not five times, but twenty-five times as many connections are needed as for one thousand. Nor is there the saving of expense outside the central office in the telephone business that is to be found, for example, in connection with electric-lighting. For the best service it is necessary to have a distinct wire for each new subscriber. Fair service can be given to two parties on the same line. Four-party lines are less satisfactory. Lines serving more than four have been found to work so badly that they are now little used in cities. Thus as regards outside wiring the expense grows uniformly with the number of subscribers. There are, of course, on the other hand, economies in administration, etc., which result from an increase in the number of subscribers and which must be taken into account. On the whole it appears to be true, however, that increasing rather than diminishing expense is the law of growth in the telephone business.

Monopoly results in this business from the fact that the larger the company the more valuable is the service that it can render. Each new subscriber means another person or firm with whom other subscribers may talk. No one would care very much for a telephone if it enabled him to talk to only fifty people. It is ten times as valuable when it enables him to talk to five hundred. If it enables him to talk at will with five thousand and he is a man of affairs with business relations with many of them, it becomes well-nigh indispensable.

Advantages of Monopoly

In the case of the telephone business in the United States monopoly organisation was the original form because of the patent. Since the patent expired the monopoly continues because few persons care to leave old companies with their large numbers of subscribers to throw in their fortunes with new companies with small numbers. New companies do start up, of course, and their promoters, and others who hope that competition may lower rates, become subscribers. If the old company feels itself threatened, it takes up the gauntlet and enters upon a war of rates which soon brings the weaker concern to terms. The consolidation which follows is not only good as a business measure for those directly interested, but it is in harmony with the best interests of the whole community.

One company able to connect any subscriber with all the other persons who use telephones is greatly to be prefered to competing companies, which at best render but a partial service. The higher rates which follow consolidation are not socially beneficial, but the remedy for high rates in the telephone business, as in connection with other natural monopolies, is not competition, but legal regulation.

Methods of Increasing Telephone Rates

A study of the evolution of the methods of charging for telephone service throws an interesting light on the means by which the companies increase their charges as the number of their subscribers grows. It shows in the first place that the rates per message are higher the larger the size of the city in which the telephone is installed. For example, in the published rates for the winter 1901 to 1902 the business rate for 1500 messages per annum on a one-party line was $126 in the Borough of Manhattan, New York City, $105 in Boston, and $87 in Washington. The differences are thus sufficient to make up for a considerable increase in the expense of rendering the service in the larger places. Nor is this the only contrast. In the larger places each subscriber is apt to use his telephone more than in the smaller. By changing from the original plan of charging a lump sum for unlimited service to the plan now almost universal of charging for each message, the companies have increased the actual returns on each instrument in the larger places very considerably. To the subscriber the system of charging for each message seems fair and reasonable. To the company it is highly advantageous because it causes its receipts to grow in increasing proportion as the size of the exchange grows, although no change appears to have been made in the rates. In these ways the telephone monopoly adjusts its charges to the value of the service it renders and is fully compensated for any increase in the relative expense of supplying telephone facilities to an increasing number of patrons.

Monopoly Profits of Municipal Monopolies in the United States

§ 256. For the reasons explained in Section 114, Chapter XI., it is well-nigh impossible to ascertain the relation which the earnings of a business organised as a corporation bear to the capital actually invested in it. This is particularly true in the case of municipal monopolies in the United States, as they

have had every inducement and facility to conceal their profits by means of overcapitalisation. At least two investigations have, however, been made which throw some light on the profitableness of street-railway enterprises.

According to Professor Spiers,* who made a careful study of the street railways of Philadelphia, the terms on which the Union Traction Company, organised in 1895, acquired control of all of the street railways in that city involved the payment by it of 5 per cent. interest on the capital actually invested in these lines, which he puts at $35,000,000, and in addition on $75,000,000 which represents the value of the franchise or of the monopoly which the subsidiary companies enjoyed. In other words the lease calls for payments aggregating nearly 16 per cent. on the capital originally invested. If instead of capital invested, the expense of reproducing the plants were taken as the criterion of the proper capitalisation, the showing would be even more favourable from the point of view of monopoly profit. Since Professor Spiers made his inquiry the Union Traction Company has itself been leased by a new company, organised in 1902, on terms which insure a fair monopoly profit to its own stockholders over and above that promised to the subsidiary companies. An even more thorough-going inquiry than that made by Professor Spiers in Philadelphia was made a few years later by a committee of the Civic Federation in Chicago. According to the Report † published in 1901, it was found that nearly $75,000,000 of the total valuation of $120,000,000 put upon the street railways of Chicago in July of that year, represented the value of franchises, or of the monopoly. The net earnings of the companies during the preceding year were found to equal 14.6 per cent. on the original cost of the plants, rolling stock, etc., of the companies, and 20 per cent. on the cost of reproducing these plants and equipment. If the results shown by these two investigations may be accepted as fairly typical of the profitableness of street railway monopolies generally, and there is no reason known to the author for supposing that conditions in Philadelphia and

**The Street Railway System of Philadelphia*, p. 45.

†*The Street Railways of Chicago, Reprinted from Municipal Affairs*, 1901.

Chicago have been peculiarly favourable to these businesses, the monopoly profit in the United States from this one kind of municipal enterprise must aggregate many millions each year. According to a report of the Census Bureau 799 of the 817 operating street and electric railways which did business in the United States during the year ending June 30, 1902, showed gross earnings equal to nearly $250,000,000 and net earnings of over $105,000,000. If the latter bore the same relation to the original cost of plant and equipment as was shown for Philadelphia and Chicago (that is, 14.6 to 16 per cent.), from one-third to one-half of the amount ought to be credited to monopoly profit.

Such Profits Now Capitalised

Quite as profitable as the street-railway business have been the other municipal enterprises described as natural monopolies. If the monopoly profits from all of these businesses in the United States could be added together, it would, doubtless, be found that they amount each year to hundreds of millions of dollars. When the magnitude of these profits and the ease with which they may be capitalised are considered, the many large private fortunes which have been gained by bribing State legislatures and municipal councils to dispose of franchises for municipal monopolies for a mere fraction of their value need excite no surprise. Unfortunately, the stocks and bonds of these corporations have changed hands so frequently since they were originally issued that the men who have reaped the largest returns from them will not be affected by the tardy measures that may now be taken to secure a larger share of the benefit from these improvements for the whole people.

The Solution of the Municipal Monopoly Problem

§ 257. The usual first impulse of the student of the municipal monopoly problem is to advocate municipal ownership and operation as a remedy, and there is much to be urged in favour of this policy. Monopolies by their very nature, concerned with services in which the whole people have a vital interest, and limited in the scope of their operations to the particular towns or cities which they serve, these businesses, if any, it would appear, should be undertaken by municipal governments as branches of the public administration. Yet the objections to such a policy for the cities of the United States are very strong. The arguments on either side must be weighed in con-

nection with the local conditions affecting the problem. Only in this way can a wise decision be arrived at.

Arguments for Public Ownership

The advocates of public ownership claim the following advantages for that policy: (1) The quality of the service rendered by a branch of the public administration is likely to be superior to that resulting from private enterprise. (2) The desire for profit being removed, the charges under public ownership will be adjusted to the expense of rendering the service. From this it is argued that charges will be low and the widest use of these essentials to civilised existence will be encouraged. (3) The corrupting influence of unscrupulous corporations anxious to retain or to have extended their franchise privileges will be removed from city politics. (4) Enlarging the scope of municipal activities will enlist in the service of the city more and better officials. At the same time it will increase intelligent interest in public affairs and tend to elevate the tone of political life. This argument assumes, of course, that the new departments of the municipal government will be subjected to adequate civil service regulations. (5) Experience, it is claimed, has shown that nothing short of public ownership and operation of these businesses can secure the degree of control necessary to the safeguarding of the public interests.

Against Public Ownership

In support of private ownership and operation the following considerations are urged in rebuttal: (1) There is no ground for assuming that the service rendered by the municipal government will be better than that rendered by private enterprise. On the contrary, if experience is to be relied upon, municipal governments will inflict on the public water, gas, etc., of qualities that would not be tolerated from private companies organised for profit. In this connection the improvement in the quality of the gas that resulted from the lease of the Philadelphia gas plant to a private company in 1898 is cited. (2) The inefficiency characteristic of municipal activity is certain to show itself in high expenses of operation. These higher expenses may necessitate higher charges than are required under private management to afford even a liberal monopoly profit. (3) At the present stage of political development, public ownership and operation would mean simply more spoils for politicians.

In its practical effects it would be even more demoralising, politically, than the corrupt influence of private corporations complained of. (4) Private ownership is more progressive than public management. In this connection the backward condition of the municipal street railways in Great Britain is cited. Though temporary advantages might result from public ownership, it is argued that this policy would sacrifice the public interest in the long run by checking improvements. (5) It is denied that adequate legal regulation and control of private companies may not be secured when the community is really alive to its own interests. Given care in the drafting of franchises and insistence that these shall lapse after a limited time, more satisfactory results may be realised, it is claimed, under private than under public ownership.

Other Considerations

These arguments, it will be seen, are partly contradictory and partly related to unconnected phases of the problem; their mere statement emphasises the necessity of studying local conditions before declaring for either public or private ownership. In general, it is probably true that the quality of the service can be more easily controlled under public than under private management. Where quality of service is all-important, as in the case of the water supply, this furnishes an argument for the former which is not found, for example, in connection with the telephone business. On the other hand, where the methods of operation are in process of rapid improvement, as in the case of the telephone business, the superior progressiveness of private management is an argument on that side that is not found in connection with the business of supplying water. More striking even than differences between the different businesses are the differences between the political preparedness of different localities for public ownership. In certain Massachusetts towns, where public interest is highly developed, these services may be and have been undertaken with success. In other towns of the same size in other sections in which civic self-consciousness is just beginning to manifest itself, attempts to perform them through the town governments have frequently resulted in failure.

In the United States, up to the present time, there has been a marked tendency to rely upon private initiative and private

enterprise for the performance of these services, as of other services of an industrial character. The only important exception has been in connection with the business of supplying water to dwellers in towns and cities, and this has been undertaken by municipal governments less because of any distrust of private enterprise in this field than because good water has been demanded by public opinion even before the business of supplying it gave promise of proving financially successful. Municipal water plants have thus been comparable with the public schools in that they have served to supply to citizens often at less than cost an indispensable condition of civilised life. Situation in the United States

Abroad, and especially in Germany, the preference is for the public ownership and operation of businesses of this type. If the conditions in any two countries were sufficiently similar to admit of comparison, something might be learned by a study of the results of the different systems in different lands, but, unfortunately, conditions are quite unlike, and it appears to be the rule that those who apply the comparative method to this problem prove, at least to their own satisfaction, just about what they hoped to establish when they began their inquiry. In Europe

If, after carefully weighing the advantages and disadvantages of municipal ownership and operation, a community decides against its adoption, the alternative is by no means the unregulated private ownership and operation encountered in most American cities. For these monopolies, as for most other monopolies, public regulation and control are indispensable to the protection of the public interest. To determine how this control shall be exercised is a problem for students of politics rather than economics, but the following general principles may be suggested: (1) Such businesses are natural monopolies, and nothing is to be gained by attempting to subject them to the control of competition. Exclusive franchises should be granted to the companies entrusted with them. (2) These franchises should be limited to a definite term of years. The term must be long enough to encourage that investment of capital that is indispensable to efficient service, but not so long as to commit the municipality to high charges when changed conditions may Methods of Regulating Municipal Monopolies

make lower charges profitable. When the term expires the franchise should revert to the municipality and it should have the privilege of acquiring for itself or for a new company, at a fair valuation, the plant and equipment of the old company, in case its charter is not extended. (3) The specifications in the charter should be carefully drawn by experts so as to insure at least at the outset, the best quality of service at reasonable rates. Charters should be granted like other Government contracts, to the responsible bidder offering the most favourable terms, and every effort should be made to advertise widely the provisions of the charter, and to prevent collusion between those who make bids. Space will not permit detailed discussion or defence of these principles. Although stated dogmatically, it is believed that they represent the consensus of opinion among students of public-service corporations who recognise them as monopolies and yet hesitate to advocate for them municipal ownership.

Obstacles to Regulation in the United States

It is one thing to lay down general principles and quite another to carry them out in practice. Only of late years has public opinion in the United States been sufficiently enlightened on the subject of municipal monopolies to demand any sort of adequate control and regulation, and in the meantime all sorts of abuses have been permitted. Perpetual charters have, in many cases, been granted on terms which permit the companies operating under them to disregard completely the interests of the public. Worse than all, public-service corporations have come to exert an influence on political parties, through contributions to campaign funds, and on public officials, through powerful and unscrupulous lobbies, which opposes a serious obstacle to efforts to control them through political means. Neglect of the question has brought about a state of affairs in which each community is confronted by a special problem, modified by local conditions, and must proceed as best it may to gain the mastery over the corporations which it has so carelessly created and allowed to grow to overweening power and influence. In dealing with such corporations vested interests must be respected, but it must not be forgotten that the true interest of the whole community is more important than that of a particular class in the commu-

nity, and that every great reform of necessity inflicts hardship upon some individuals. It is the duty of the Government to indemnify those who are injured by changes which are deliberately undertaken with a view to the general welfare, but it is even more its duty to make such changes. The reform and the desirability of the reform should be the predominant consideration, the indemnification an incidental accompaniment neither to be exaggerated nor lost sight of. Only thus can progress towards a better economic and political organisation of society be realised.

REFERENCES FOR COLLATERAL READING

* *Le Rossignol*, Monopolies Past and Present (bibliography); *Bemis*, Municipal Monopolies; **Darwin*, Municipal Trade: The Advantages and Disadvantages; *Spiers*, The Street Railway System of Philadelphia; Report on the Street Railways of Chicago (Municipal Affairs, 1901); **Ely*, Problems of To-day, Chaps. XVII-XXI.

CHAPTER XXIV

THE RAILROAD PROBLEM IN THE UNITED STATES

National Monopolies of Organisation

§ 258. In addition to the municipal monopolies discussed in the last chapter there are businesses, national in their scope, which should also be classed as natural monopolies of organisation. The principal are the telegraph, the long-distance telephone, the express, and the steam-railway business. For them, as for municipal monopolies, the fixed charges are a chief item of expense. Thus a telegraph or long-distance telephone company, whether large or small, must maintain offices in and connecting wires between the principal centres of population or it will have few patrons. In comparison with the cost of this necessary equipment the expense of receiving and sending messages is small. It follows that one company utilising fully its permanent plant can conduct all of the business more economically than can two or more companies needlessly duplicating plants. In the express business the situation is similar as regards terminal offices, although the tendency towards combination and monopoly is less marked than in the telegraph business, because the actual transportation of goods is effected by railways acting as agents. These circumstances make monopoly the economical form of organisation for each one of these businesses. That no one of them has yet become an open monopoly in the United States is no disproof of this assertion. Public hostility to monopoly is so familiar and finds such frequent expression in the decisions of the courts, that business managers are careful to maintain the forms of competition even after the substance has departed.

Circumstances Making the Railroad Business Monopolistic

§ 259. The railway business exhibits on a larger scale similar conditions to those found in the telegraph business. Roadbed and terminal facilities represent heavy fixed charges that must be met, no matter how large the volume of business. The more fully these can be utilised in carrying on a dense traffic the

smaller will be the expense for each unit of traffic. It follows that competition for business between long-distance railways partakes of the same life-and-death character that was described in connection with street railways. When one road gains an advantage and begins to swell its profits by drawing from the profits of the other company, the situation of the latter is very soon rendered desperate. It has to choose between combination with the other road on its own terms and bankruptcy, and either choice, as American experience has shown over and over again, means in the end combination and monopoly. "A railroad is thus," to quote from one of the Reports of the Interstate Commerce Commission, " essentially a monopoly. This is literally true as to all local points upon its line which are reached by it alone." And it is virtually true, as the report adds by implication, even of " competitive points," since the rates at such points are now fixed quite generally by agreements between the nominal competitors.

Progress towards Concentration in the Railroad Business in the United States

The progress towards concentration of railway control in the United States has been marked by three distinct stages. In the earlier period the railways were looked upon as beneficent agencies deserving of generous public support and of all confidence. Consolidations were regarded with indifference, if not with favour, and the business was permitted to develop in the direction of monopoly as rapidly as its nature dictated. About 1870 it began to be appreciated that the power of the railways for evil was quite as great as their power for good. The cry of extortionate rates and monopoly was raised, especially in the agricultural States of the middle West, and an era of drastic restrictive legislation was inaugurated. For fifteen years the States tried to deal with the railway problem through State laws and State railway commissions armed with sweeping powers. The chief result of their efforts was to educate public opinion as to the real nature of the railway business and to prepare the way for Federal interference. Incidentally, they forced some of the roads into bankruptcy, and compelled all of them to substitute secret for open methods for securing the centralisation of control that continued to be desirable. In this second stage secret agreements in regard to rates were at first substituted for competition. The ease with which such agree-

ments might be violated suggested that to them be added definite understandings in reference to the division of the traffic between nominally competing roads. The entire business was "pooled" and then divided up in a certain fixed proportion between the companies entering into the pool. As one provision of these pooling agreements guaranteed to each road its proportion of the revenue from the joint traffic, whether it carried its exact proportion of the freight and passengers or not, the inducement to rate-cutting on the part of individual roads was removed, and the stability of rate agreements was proportionately strengthened. Such "pools" became very common after 1880 and served to create combinations and monopolies on behalf of the roads entering into them as effective, while they lasted, as though the roads were under one management. In consequence, they became special objects of attack on the part of those who still believed in competition as a remedy for excessive railway rates. When the Interstate Commerce Act was passed, in 1887, one of its clauses expressly forbade "pooling." The Federal Anti-Trust Act of 1890, as interpreted by the United States Supreme Court, went even further, and prohibited all agreements in regard to rates. The result of these two measures has been to compel railroad managers during the third period of railroad development to effect out-and-out combinations of competing lines as a means to securing centralised control. This has been accomplished either through the purchase by one road of a controlling interest in the stocks of its competitors or by the creation of a new corporation to acquire controlling interests in the stocks of two or more rival companies, or through so-called "community of interests" arrangements, based on the acquisition by one company of enough stock in another to secure representation on its board of directors. In one or another of these different ways centralisation of control has been extended to embrace an ever larger and larger proportion of the railway mileage of the United States. This is indicated for the last decade by the fact that from 1890 to 1900 the proportion of the total railway mileage of the country operated by companies controlling 1000 miles of line and upwards increased from 47.5 per cent. to 60.8 per cent. Since 1900 progress in this direc-

tion has been at an accelerated rate. In the year 1901 alone three great combinations were consummated: the Pennsylvania Railroad acquired a large interest in the Baltimore and Ohio, the Union Pacific acquired control of the Southern Pacific, and the Northern Securities Company combined the Great Northern and the Northern Pacific just after the latter had acquired the Chicago, Burlington, and Quincy. The last of these consolidations may be declared illegal by the Supreme Court, as it has been by a lower tribunal, but it is the current opinion among railroad men that the unified control which it was intended to perfect will be continued. The movement towards consolidation has already gone so far that it is considered a safe prediction in railroad circles that before the end of the present decade the important railway mileage of the United States will have come under the control of four or five giant companies. Whatever may be the fate of this prophecy, it may be asserted with confidence that competition in regard to rates has already given way on all the more important railroad systems to open or secret traffic agreements. This does not mean necessarily that rates are higher than formerly, although the Interstate Commerce Commission secured a good deal of evidence indicating that they were raised by joint action on the part of the railroads of the country from January 1, 1900, to January 1, 1902. The railroad is still restrained in its rate-making by all of the considerations enumerated in the section discussing the limitations on monopoly, and happily the railroad business is of such a nature that low rates and a large volume of traffic are usually much more profitable than high rates and a smaller amount of business. It does mean, however, that the time has passed when competition between railroads can longer be relied upon to control the policies of railway managers.

Discrimination in Railway Rates: Between Commodities

§ 260. The first attacks upon the railroads, in the Granger legislation of the decade from 1870 to 1880, were based on the charge that their rates were extortionate, but it is now generally recognised that an even more serious evil in connection with them is discrimination. This may be of three kinds: First, freight classifications may be made in such a way that particular commodities are discriminated against. For example, it has

recently been charged against the railroads carrying wheat from the middle West to the sea-board that they make rates on wheat so low in comparison with their rates on flour that the millers of Minneapolis and Duluth can no longer produce for export. The determination of the rates that shall be charged on different commodities presents one of the most difficult problems in the whole range of railroad practice. In general, the policy of railroad managers is so to classify articles that each will pay as high a rate as "the traffic will bear." The more valuable the commodity, in proportion to its bulk, the higher, ordinarily, the rate it can afford to pay. On this ground the highest rates apply usually to costly finished commodities, and the lowest to staple materials. It is obvious that within the limits of this general plan there is wide range for variation, and that the railroad manager who wishes to favour the development of one industry at the expense of another, or of one locality at the expense of a rival, or of one firm in opposition to its competitors, may do so in many cases by merely changing the classification of the articles to be affected.

Between Places

More serious, because more far-reaching in its consequences, is the second form of discrimination—that between places. Under present conditions no community lives to itself alone. Most communities produce chiefly for export to other localities and rely on other localities for most of the commodities needed to satisfy home wants. As a rule, the railroad is the agency through which the exportation of surplus products and the importation of needed products in exchange is effected. It has still at certain points competitors in the public highways and in canals and water routes, but for ninety out of every hundred communities the services of the railroad are indispensable to industrial prosperity, if not to industrial existence. Under these circumstances the power of railroads to stimulate or retard the prosperity of centres of population can hardly be exaggerated. By granting low rates they can transform even unpromising sections into busy seats of agriculture, manufacturing, or even mining. High rates may have an equally deadening effect upon sections that were previously prosperous.

In general, the interest of the railroad is served by encouraging the growth of centres of population where the natural con-

ditions are most favourable, but it often happens that special reasons lead to quite a different policy. One such reason is the necessity of sharing traffic with other transporting agencies at competitive points. If high rates are asked at such points, the temptation to break traffic agreements in order to obtain a larger share of the business is too strong to be resisted. Hence low rates usually prevail where two or more roads serve the same community, and railroad managers are only too apt to charge high rates at intermediate points. Local rates were so high when the Interstate Commerce Act was passed in 1887 that a special clause, known as the "long and short haul provision," was inserted to protect local shippers. This provides that the rates between intermediate points on the same road must not exceed rates between terminal points. Another reason for discrimination between places is the special interest which the railroad or its managers may have in the development of particular localities. It has not infrequently happened that railroad managers who have acquired large tracts of land in particular sections have deliberately lowered freight rates for such sections in order to attract settlers to them and in this way enhance the value of their holdings. The demoralising consequences of such unjust practices have been experienced too frequently in all parts of the United States to require emphasis.

Between Persons

§ 261. The third and worst form of rate discrimination is that between persons. The motive for such discrimination is inherent in the nature of the railway business. Unlike the farmer or the manufacturer, the railroad manager cannot calculate what it costs him to carry additional freight or additional passengers. His fixed charges must be met in any case. The additional expense connected with additional traffic is so small that almost any rate for the particular traffic will prove profitable so long as the open rate for other traffic is maintained. "Generally speaking," to quote again the language of the Interstate Commerce Commission, "he feels that he must have the traffic. His road is there, and it can be used for nothing else. The property with which he stands charged may be seriously injured without that particular traffic, and he must get it when it is moving. He cannot lie idle for better prices or more prosperous conditions. There is, therefore, a constant temptation

to obtain it at any cost. Now, the rates between two competitive points have been published. The manager of one road finds that business has abandoned his line, and he believes that it is moving by a rival route. He can draw but one inference, and that is, that his competitor has secretly reduced the rate. Under these circumstances what shall he do? Shall he maintain the published rate and thereby abandon business? But that means disaster to his road, the loss of his reputation as a manager, and ultimately of his employment. What most managers actually do is to get the business by making whatever rate is necessary."*

Reasons for Discriminations

It may be said that railroad managers have no more reason to deal unequally with different customers than managers of other businesses; but this is, unfortunately, not the case. A situation which frequently confronts a manager was described by Mr. C. M. Wicker of Chicago, in testimony given before an investigating committee of the Illinois legislature. He said: "Here is quite a grain point in Iowa, where there are five or six elevators. As a railroad man I would try and hold all these dealers on a level keel, and give them all the same traffic rate. But suppose there was a road five or six miles across the country and all these dealers should begin to drop in on me every day or two and tell me that the road across the country was reaching within a mile or two of our station and drawing to itself all the grain. You might say that it would be the right and just thing to do to give all the five or six dealers at the station a special rate to meet that competition through the country. But, as a railroad man, I can accomplish the purpose better by picking out one good, smart, live man, and, giving him a concession of three or four cents a bushel, let him go there and scoop the business. I would get the tonnage, and that is what I want, but if I give it to five it is known in a very short time." For such reasons railroad managers usually prefer to deal with one rather than with a number of shippers. The discriminating rate must be kept secret or other shippers will be dissatisfied, and secrecy is only possible where knowledge of the transaction is confined to the manager and the favoured shipper. Nor are shippers them-

* *Twelfth Annual Report* (1898), p. 18.

selves entirely passive in connection with discriminations. Business managers controlling large amounts of traffic at competitive points are well versed in the process of playing one road off against another. It is even alleged that in some cases men have withdrawn their entire business from one road in order to convince its traffic agent that they were getting discriminating rates from another, and in this way persuade him to grant even lower rates, when, as a matter of fact, no discrimination had existed.

Case of the South Improvement Company

The reports of the investigating committees and commissions which have inquired into the practices of railroads in the United States are full of evidence as to the extent to which discriminations have been practised. Some of the most flagrant cases have been brought to light in connection with investigations of the trusts. In one case the South Improvement Company, which was organised by the original promoters of the Standard Oil Company, entered into a formal contract with a railroad under which the latter was to charge it ten cents a barrel for transporting its oil, and other companies thirty-five cents a barrel for the same service, with the proviso that twenty-five cents of this excessive charge should be paid to the South Improvement Company itself. That such an arrangement would be fatal to competitors who were compelled to ship over a railroad promising such discrimination is obvious. There is abundant evidence that similar, if less favourable, traffic arrangements had much to do with the early success of the Standard Oil Company in crushing its competitors or compelling them to sell out to it on terms favourable to itself. In the judgment of the Interstate Commerce Commission, expressed as recently as 1898, "there is probably no one thing to-day which does so much to force out the small operator and to build up those monopolies against which law and public opinion alike beat in vain, as discrimination in freight rates."

Monopoly Profits from the Railroad Business in the United States

§ 262. That the businesses classified as national monopolies of organisation have given rise and do give rise to very large monopoly profits is well understood, but the reasons already explained make the exact measurement of these profits out of the question. They are peculiarly sensitive to public opinion

and have been careful to so adjust their nominal capitalisations to their earning powers that the interest and dividends that they pay to investors seem, when the risks connected with such enterprises are considered, scarcely a fair and certainly not an excessive return. Thus the aggregate capitalisation of the railroads of the United States was returned to the Interstate Commerce Commission on June 30, 1900, at $11,490,000,000 divided about equally between bonds and stock. During the preceding year interest was paid on 95 per cent. of the bonds, but on only 46 per cent. of the stock, and the average return on bonds and stock together was only 3.4 per cent. On only 3 per cent. of the stock were dividends in excess of 8 per cent. paid, while on 72 per cent. of the outstanding bonds the rate of interest was under 6 per cent. Equally modest returns are shown for most of the telegraph, long-distance telephone, and express businesses of the country. To get behind figures like the above to a knowledge of the relation which earnings bear to actual investment in these enterprises is a task that has only been undertaken in a few instances. It is undoubtedly true that in many cases these monopolistic businesses have proved unprofitable. For them as for other monopolies, monopoly profit is a possibility rather than a necessity. No matter how complete the monopoly which a railroad may enjoy of the traffic of a given section, it cannot make this the source of monopoly profit if the section happens to be a desert and its traffic only sufficient to employ one train a week. It is equally incontestable that many of these enterprises have proved enormously profitable. The railroads in the older and more prosperous portions of the United States have earned immense fortunes for hundreds of different investors and speculators and promise to earn equally large fortunes for as many more before the rates are adequately controlled in the public interest. The enormous earnings which the railroads alone are capable of making are illustrated by comparing the figures for recent years. The year ending June 30, 1900, was considered a year of great prosperity in the railroad world, and yet the earnings of the railroads of the country increased in the following year, according to the statistician of the Interstate Commerce Commission, about $102,000,000 as regards gross, and

$33,000,000 as regards net. The earnings of the roads in 1902 were higher than those of 1901, according to the same authority, by about $147,000,000 as regards gross, and $62,000,000 as regards net. And these additional earnings were realised for the most part not by roads which were not paying a fair return on capital invested in 1900, or by new roads, but by those which even in that year were realising large monopoly profits. If to the monopoly profits of the railroads we add those of the other national monopolies referred to, we may assert without exaggeration that the aggregate return from these sources adds its hundreds of millions of dollars to the annual income in the United States that is properly characterised as monopoly profit.

National Regulation

§ 263. Efforts on the part of the State legislatures to regulate railroads in the United States have encountered an insurmountable obstacle in the clause in the Federal Constitution assigning control over interstate commerce to Congress. Their power to regulate is limited to the affairs of State roads, and these now play a very minor part in the railroad business of the country.

The Interstate Commerce Act

Congress did not bestir itself with a view to regulating railroads engaged in interstate commerce until 1885. In that year the Senate appointed a special committee to inquire into the evils of railroad management. Its report, submitted the following year, furnished the basis for the Interstate Commerce Act of 1887. The principal provisions of this important measure were the following: (1) discriminations between persons, places, and commodities were prohibited, and railroad officials granting discriminating rates were made liable to fine and imprisonment; (2) railway rates for interstate traffic were required to be just and reasonable, and any rate not just and reasonable was declared to be unlawful, and valid ground for a suit for damages by the injured party; (3) railroads were required to publish their rates and to change them only on public notice; (4) they were prohibited from charging a higher rate for a short haul than for a long haul over the same line and under similar circumstances, unless authorised to do so by the Interstate Commerce Commission; (5) pooling contracts between railroads were prohibited. The Act also created an

Interstate Commerce Commission to consist of five members and to be responsible for its enforcement and the investigation of cases of alleged violation. The powers of the Commission were extended by an amending Act passed in February, 1891. It may now subpœna witnesses and require testimony, even though such testimony is incriminating to the witness giving it, and call upon assistant attorneys general to bring suit in the name of the United States against offending railroads and their officials.

Defects in the Act

Notwithstanding its large powers the Interstate Commerce Commission has failed to enforce some of the essential provisions of the Interstate Commerce Act. This has been due chiefly to defects in the Act itself of which the most serious is the attempt to prohibit, at one and the same time, discriminations and pooling. Experience has shown conclusively that competition between railroads involves discrimination. Competition in the railroad business means in practice making special rates to attract special traffic. But experience has shown with equal conclusiveness that agreements between railroads designed to put an end to competition can only be maintained when supplemented by pooling contracts. So long as the proportion of freight which each road is to secure depends upon its activity, the self-interest of railroad managers, or their credulity acted upon by the misrepresentations of unscrupulous shippers, will make discrimination in rates almost inevitable. The law undertakes to enforce two lines of policy which will not run together so long as different railroads act as carriers for the same territory.

Its Interpretation by the Courts

Other defects in the act have been brought to light through the interpretation given to it by the Supreme Court. That tribunal has decided that a railroad may properly charge less for transporting imported commodities from a port of entry to their destination within the country than is charged for domestic products of the same kind, over the same route. This decision has deprived the Commission of much of the influence it might have had in adjusting freight rates on imported goods to those on domestic products. The Court has further held that while the Commission may declare any given rate unlawful because neither just nor reasonable, it may not prescribe a substi-

tute rate which is just and reasonable and therefore lawful. Under this ruling the Commission's power is limited to condemning prevailing rates. While in practice this may enable it by repeated rulings to establish the rate it considers fair, it has caused needless friction and delay. Even more serious has been the repeated failure of the Supreme Court to sustain the Commission in its decisions in reference to rates. This has been due in part to the policy of attorneys representing the railroads of withholding important evidence until appeal has been taken to the United States courts, for the deliberate purpose of undermining the authority of the Commission.

Amendment of 1903

An important amendment to the Act was added in February, 1903, by which railway corporations are themselves made liable to heavy fines for violations of the Act by any of their officers or agents and the latter are relieved from the punishment of imprisonment provided by the original Act, and by which the Interstate Commerce Commission is authorised to secure injunctions restraining railroad companies believed to be violating the Act from persisting in such violations. The advantage of the injunction process is that it renders any person disregarding it liable to summary punishment for contempt of court without the protection afforded by the ordinary rules of evidence. That these changes in the law will materially assist the Commission in its efforts to enforce the Act cannot be doubted, but it is the opinion of students of the railroad problem that still other amendments will be necessary to insure that degree of regulation of the business of the railroads of the country which the public interest requires.

Arguments for and against National Operation of Express and Telegraph Businesses

§ 264. Many thoughtful persons, despairing of any solution of the problem presented by natural monopolies along the line of Federal regulation, advocate national ownership and operation of these businesses with the same confidence that they advocate municipal ownership and operation as a remedy for municipal monopolies. The extension of the postal business of the United States to include the express and telegraph business is so widely advocated that it may be said to be a living issue. Hardly a session of Congress passes that bills are not introduced having this extension in view and one or other of these steps has been advocated with great regularity by recent post-

masters general of the United States. If both of these businesses were not very well managed already and if their charges were not kept down by the competition of other agencies for communication and transportation, there is reason to think that the advocates of public ownership would carry their point. The arguments on either side are so similar to those reviewed in connection with the discussion of municipal ownership that it will be necessary only to summarise them. Few question the ability of the Government to manage these businesses efficiently. Those opposed to national ownership maintain, however, that they are already managed as well as they could be by the Government and that rates are as low as the Government could afford to make them.* They assert further that the threat of government purchase and operation is an effective check on any tendency these businesses may have to use their monopoly power to the disadvantage of the public. In support of national ownership it is urged that the Government already maintains in its postal system most of the machinery necessary to the conduct of these kindred businesses and that for this reason its expenses of operation would be considerably less than they are to the private companies which now conduct them. Under these circumstances lower rates might be charged. Moreover it is insisted that the present method of arranging express and telegraph charges does not serve the general interest as well as one similar to that of the post-office and that government ownership is the only method by which the point of view of the managers of these important businesses can be changed from that of greatest possible profit to that of greatest possible service.

Arguments for National Ownership and Operation of the Railroads

The national ownership and operation of the railroads of the United States are a much more ambitious project. In addition to the vastly larger initial outlay that such a policy would entail and the immense increase of public officials that would result from it, there are complexities in the railway business itself that make the success of government operation at least problematical. The principal arguments on which defenders of the

* The untested possibilities of wireless telegraphy makes the present a decidedly unfavourable time for the government to venture into the telegraph business.

government ownership programme rely may be summarised as follows: (1) Discriminations would cease and in their place general tariffs, published in advance, and applying to all shippers alike, would prevail. (2) Rates might be lower, as the roads would have to earn only the two per cent. or so on the bonds which the Government might issue in exchange for them at the time of purchase, in place of the higher interest and dividends now demanded by stockholders. (3) In the determination of rates broader principles would be considered than those on which railway managers base their decisions. The railroads would become a great engine for the promotion of industrial and social progress. (4) The corrupting influence of private railway corporations would be removed from political life. (5) Such an enlargement of the field of government service would alter the feeling which the average American entertains for holders of public office. A new type would be drawn into the public service and the whole plane of official life would be raised until the preference would be for it, as has long been the case in Germany, instead of for private activity.

Arguments against the Policy

To these optimistic anticipations defenders of private enterprise in the field of railway transportation oppose the following counter-arguments: (1) Rates would become rigid and instead of adapting themselves readily to changing business conditions, as at present, would force business to adapt itself to them, with industrial lethargy and stagnation as a result. (2) Loss of efficiency in organisation and the methods of operation would prevent any lowering of rates under government management, at the same time that it would be likely to cause deterioration as regards quickness and convenience of service. (3) Substituting for present business principles vague rules in regard to social expediency, as guides in the determination of rates, would cause confusion without really promoting the ends sought. The question as to what constitutes just rates would become the favorite theme of demagogues, and even if not allowed to influence the rates actually charged, the latter would stir up public opinion against the Government in a way that must be detrimental to the public service. (4) The decision of rate questions as they affect different sections and of questions connected with railroad extensions would inevitably get

into politics, and injustices even more intolerable than those now committed by the privately owned railroads would be practised for the sake of party advantage. (5) Far from raising the plane of public service, adding so enormously to the spoils of each national election would confirm the dominance of the corrupt party machine and party boss.

Other Considerations

In addition to these partly theoretical and hypothetical objections, the opponents of national ownership emphasise practical difficulties. European experience is discredited on the ground that no European country requires more than a fraction of the railway mileage needed by the United States. The enormous cost of acquiring the present lines and the difficulty of deciding where new lines ought to be built are urged. Finally the whole proposal is characterised as a leap in the dark, when only the first steps have as yet been taken towards trying to regulate the railway business through public commissions. The last consideration seems to merit most attention and is likely to postpone any experiments along the line of national ownership until the Interstate Commerce Commission itself admits its inability to regulate the railways and demands the more radical remedy.

Need of Reform in Interstate Commerce Act

§ 265. That the Interstate Commerce Act is defective is conceded by all the various interests which that measure affects. Railroad managers criticise its prohibition of pooling. Shippers urge that if competition cannot be relied upon, the powers of the Commission must be increased to a point that will enable it to regulate rates. Students of the railroad problem, meantime, desire that fuller powers may be given the Commission in connection with the collection and publication of information about the railroad business of the country. These demands and others have been repeated year after year in the reports of the Commission itself and the arguments on either side have been clearly stated and exhaustively discussed. In its Report for 1895 the Commission enumerated the amendments which in its judgment were needed to make the evident intent of the Interstate Commerce law effective. Some of these were included in the amending Act of 1903, but others are still lacking.

The changes most urgently required are believed to be the

Changes Recommended by the Commission

following: (1) The Commission should be given the power not only to declare existing rates unlawful, when complaint of such rates is made, and "after due investigation and inquiry, upon notice to carriers, full opportunity having been given for them to be heard," but also to prescribe the rates that would be lawful under the circumstances and to make its decisions binding upon the carriers until disallowed by the United States courts. (2) It should have control over the freight classifications adopted by the railroads, since, as already explained, changes in classification are a ready means of changing rates. (3) The prohibition against pooling contracts between railroads should be repealed. This prohibition rests on the erroneous theory that competition is desirable in the railroad business. The decision to regulate rates through a public commission is inconsistent with the policy of relying on competition. Given a commission with adequate power over rates, monopoly in the railroad business ceases to be a danger and becomes an object to be desired in the interest both of the railroads and the public. (4) In reviewing the decisions of the Commission, the Federal courts should be limited to the proceedings before that body and should not permit railroad attorneys to bring forward as evidence testimony and arguments, which, if pertinent at all, should have been brought forward during the investigation before the Commission. Only in this way can the dignity of the Commission be upheld. These four amendments would give the Commission power really to control and regulate in the public interest the railroads of the United States. Their adoption would soon determine whether government regulation is a satisfactory solution of the railroad problem. Then, to repeat the words of Judge Knapp, Chairman of the Interstate Commerce Commission, "if regulation fails, public ownership will be the next and early resort."

REFERENCES FOR COLLATERAL READING

* Reports of the Interstate Commerce Commission; Report of the United States Industrial Commission, Vols. IV., IX. and * XIX.; *Hadley*, Railroad Transportation; *Stickney*, The Railway Problem; *Lewis*, National Consolidation of the Railways of the United States; *Dixon*, State Railroad Control; * *Johnson*, Railway Finance.

CHAPTER XXV

CAPITALISTIC MONOPOLIES, OR TRUSTS, IN THE UNITED STATES

Capitalistic Monopolies or Trusts

§ 266. The last species of monopoly deserving of special consideration is that represented by the industrial combinations, or trusts, which have been characterised as "capitalistic monopolies." As now used in the United States the term "trust" applies to any industrial combination which is so large as to be the dominant factor in the branch of production with which it is concerned. Many such combinations are not, of course, monopolies. Inasmuch, however, as their main purpose according to the unanimous testimony of their promoters is to suppress competition, monopoly may be said to be the goal at which they are aiming. A reasonable definition of a trust would seem to be, "an industrial combination, not a legal nor natural monopoly, which seeks to throw off the restraints of competition by absorbing, overawing, or crushing its would-be competitors."

Motives for Organisation of Trusts

The psychology of the combination movement is easy to understand. From the point of view of the competitors in any line of business, competition is an evil rather than a blessing. It tends to lower prices when the interest of each individual competitor demands that they be maintained. It has been too customary in economics to argue as though the only motive of the entrepreneur was to enlarge the volume of his business. Quite as strong is his desire to receive high prices for his products. When producers are numerous and widely scattered and competition between them is active, the individual entrepreneur must perforce content himself with such price as the market affords, and give most of his thought and attention to keeping down his expenses of production by developing his business to the size most conducive to efficiency. The latter aim often leads him to cut prices in the hope of enlarging his

sales, and is the force on which economists rely when they assert that competition tends to keep prices down to the expenses of production of representative firms. This is the situation in all branches of business in which small-scale production is the rule. Another situation is that in which a business is already concentrated into a few highly organised and shrewdly directed plants and in which the nature of the product, a protective tariff, or some other barrier excludes foreign competition. Competition between such great industrial plants may persist, and each entrepreneur may continue to seek to derive his profit by producing more cheaply and underselling his competitors. But competition is a wearing process. It is quite as likely that the competitors may agree to combine their plants and seek for profit, not through underselling each other, but through maintaining a remunerative price for the common benefit. If to this immediate advantage of combination is added the prospect that through it the expenses of production may be lowered, and the competition of firms not in the combination suppressed, its attractions so far exceed those of continued independence that a trust is almost certain to be formed. As one well-known trust organiser expressed it, in words originally applied to the railroad business: "Where combination is possible competition becomes impossible."

The Early Trusts

The oldest industrial combination in the United States was the Standard Oil Trust, formed in 1882. This was a union of oil refineries in Ohio and Pennsylvania, brought about by the assignment of the stock of these companies to a board of nine trustees who in this way secured complete control of the business. These trustees issued trust certificates in exchange for the shares of stock assigned to them and agreed to pay all dividends declared on such stock to the holders of these certificates. All of the earnings of the different companies were pooled, and dividends were declared *pro rata* on the trust certificates, whatever might be the disposition made of particular plants taken into the combination. This was, in a literal sense, a "trust," and from it all later combinations have derived their rather misleading name. Similar trusts were organised by leading sugar-refiners and whiskey-distillers in 1887. In 1890

the Supreme Court of the State of New York, in a case brought against the North River Sugar Refining Company, one of the corporations belonging to the Sugar Trust, declared this form of organisation illegal. The Standard Oil Trust was dissolved on similar grounds by the Supreme Court of Ohio two years later.

The Present Trusts

The organisers of the Sugar Trust lost no time in securing a charter from the State of New Jersey * for a single corporation, the American Sugar Refining Company, which should absorb the plants which had formed the Trust. The certificate-holders of the Standard Oil Trust followed a different plan. Instead of creating one corporation, the trustees, who happened to be the owners, individually, of a majority of the stocks of the companies forming the Trust, divided up the shares of these companies among themselves in such a way that they continued to control them as completely as they had under the trust agreement. This arrangement was continued until 1899, when the managers of the Oil Trust secured a charter from the State of New Jersey for a corporation, the Standard Oil Company of America, which has since acquired the stocks of the constituent companies in which they were interested. The prevailing form of industrial combination has thus come to be the single corporation buying outright the property or shares of stock of the companies combined in it, and preserving none of the characteristics of the original trust except that control of the business is still lodged with a small group of men whose personal integrity is about the only guarantee which stockholders have that the affairs of the combination will be honestly administered.

Organisation of the United States Steel Corporation

Still a third form of organisation was adopted by the United States Steel Corporation, chartered in March, 1901, to combine the leading steel businesses of the country. According to this plan, the new company issued bonds and stock in exchange for the bonds and stocks of the constituent companies, but without depriving the latter of their existence. The new corporation is

* The corporation law of New Jersey had been amended in 1889 so as to permit companies organised under it to own and control the stocks and bonds of other companies. *Cf.* Meade, *Trust Finance*, Chapter III.

thus a federation of the smaller corporations of which it is composed. Its directors select all the officers of the subordinate companies, and all the dividends earned by them are turned into the general treasury for distribution among the stockholders of the larger corporation.

The Earlier Trusts

§ 267. From the time of the organisation of the Standard Oil Trust, until January 1, 1898, the progress of the trust movement was slow. At the latter date there were in existence less than a dozen large industrial combinations, of which the principal were: The Standard Oil Trust, the American Sugar Refining Company, the American Tobacco Company, the United States Rubber Company, the United States Leather Company, the American Cotton Oil Company, and the Glucose Sugar Refining Company. The aggregate capitalisation of these seven combinations was less than $500,000,000.

Progress of the Trust Movement

During the years 1898 to 1900 there ensued a veritable stampede among the managers of businesses of all kinds to enter into combinations. According to a reliable estimate 149 large combinations, with a capitalisation of over $3,000,000,000, were formed during these years. The United States Census Bureau made an investigation of the industrial combinations carrying on business in the United States on May 31, 1900. Its inquiry was limited to *bona fide* combinations, that is, to plants that had formerly appeared as competitors, and in consequence several enterprises (*e. g.*, the Carnegie Steel Company) which are usually thought of as trusts, were not considered. According to the Census Report, there were in the United States, on the given date, 183 industrial combinations controlling 2029 plants. The capitalisation of these corporations was a little over $3,000,000,000, of which about $1,800,000,000 was represented by common stock, $1,000,000,000 by preferred stock, and $216,000,000 by bonds. These figures are more conservative than those given by financial papers for the same period, and are certainly not exaggerated. Since the Census inquiry was made, several new combinations, including the giant United States Steel Corporation, have been effected. The capital of the latter company alone was $1,400,000,000, of which $304,000,000 were represented by bonds and the remainder was divided equally between common and preferred stock. It

would be misleading to add the entire capitalisation of this new corporation to the figures given in the Census Report, as most of its stock represents the stock of constituent companies which figured in that investigation. At the same time, some $500,000,000 ought to be added on its account, as its capitalisation was generously watered. Taking this and other recent combinations into account, $5,000,000,000 is believed to be a conservative estimate of the aggregate capitalisation of the industrial combinations doing business in the United States on July 1, 1903.

The Motives of Manufacturers

§ 268. The remarkable progress of the trust movement after January 1, 1898, suggests a connection between it and the contemporaneous revival of business prosperity. What that connection was is easily explained. The motives which led manufacturers to enter the trusts were the desire to suppress competition and to realise the economies of combination. By themselves these motives lost rather than gained in strength with the revival of prosperity. Working with them, however, was the motive of the stock operator. Promoters, underwriters, and "insiders" generally, wished to realise profits from the sale of new securities on a buoyant stock market, and these were the men who were most active in bringing about the combinations. The country had just passed through four years of serious business depression. Failures had been common, and even firms which succeeded in avoiding bankruptcy had felt to the full the pressure of a relentless competition. It was in this period that the phrase "competition is the death of trade" became current and that the benefits of combination as exemplified in the successful trusts, the Standard Oil Company, the American Sugar Refining Company, and the American Tobacco Company, were extolled. There seemed no reason why similar combinations might not be effected with equal success in other branches of business. The favourable mental attitude of business managers was paralleled by a very hopeful feeling on the part of the investing public. After the long years of depression, the large returns to agriculture and other branches of industry enjoyed in 1897 set free a large surplus for investment. There was thus a ready welcome for the new securities of the industrial combinations, which were made to seem even more promising than

railroad stocks had appeared during the golden age of railway promotion.

The Activity of Promoters

Several of the combinations organised in 1898 resulted from the activity of energetic manufacturers in whom their associates and former competitors had confidence. They were literally "combinations" of former competitors, spontaneously entered into for mutual advantage. As time went on, however, it became more and more the rule for combinations to be effected by professional promoters, who made up for their ignorance of the practical details of the businesses that they proposed to unite by their knowledge of finance and their skill in persuading others of the merits of their plans. The method usually pursued by the professional promoter was as follows: The leading competitors in the selected branch of industry were first persuaded that combination would be a good thing for the trade as a whole and induced to give their assent to the general plan of organisation. This task was usually easy. Expert appraisers were then set to work to determine the cash value of the plants to be combined. Armed with information so obtained, the promoter had next to bargain with the owners of the different plants to determine the terms upon which they should enter the combination. Meantime, a charter was secured, usually from the State of New Jersey, authorising a certain aggregate issue of common and preferred stock, and arrangements were made with some private banking or trust company to finance the undertaking. The usual arrangement made with individual owners was that for each plant taken into the combination preferred stock,* equal at par to the assessed value of the business, plus a bonus of an equal amount of common stock, should be given. Often, however, it was necessary to pay the assessed value of the desired business in cash and sometimes to pay considerably more than this assessed value. At this point the assistance of the underwriter would be needed. The arrangement between

* Preferred stock is stock which enjoys a preference as regards both dividends and assets. The rate of dividend to which it is entitled must be paid before any dividend can be declared on the common stock. Frequently the preferred dividends are made "cumulative," that is, when unpaid in any year, they constitute a prior lien upon the earnings of the company in succeeding years and must be fully met before any dividends can be declared on the common stock.

promoter and underwriter was usually that preferred stock to a certain aggregate amount should be taken at a certain price and paid for in cash, as the latter might be required. To this preferred stock might be added, as a bonus, an equal or even a larger amount of common stock. Besides the cash needed to purchase the plants of reluctant owners, the promoter usually required money in the treasury to insure the initial success of the combination. This also was secured from the underwriter. The promoter's own profit might come in the form of cash received from the underwriting syndicate, or in the form of stock in the new enterprise, to be held or sold as his judgment might determine. How largely it was sometimes necessary to overcapitalise a combination, in order to satisfy the demands of all those connected with it, is illustrated by the case of the Whiskey Trust. According to testimony presented before the Industrial Commission, for each $100,000 cash value of the plants taken into the combination $100,000 preferred stock and $100,000 common stock went to the owner, $150,000 common stock went to the promoter, and $100,000 preferred and $150,000 common went to the underwriter, the latter being required to furnish a certain amount of cash to serve as the working capital of the enterprise. Professor Jenks calculates that the promoters and underwriters of the trust received $10,700,000 in preferred and $13,360,000 in common stock, in exchange for $3,500,000 in cash. What their profits were it is impossible to say, but judging from the quotations for the stock immediately after the combination was launched, they probably amounted to several million dollars. In another case, that of the Tin Plate Trust, evidence was presented before the Industrial Commission showing that the promoter received $10,000,000 in common stock for his services, and that he probably realised $2,000,000 to $3,000,000 profit from the undertaking. These facts indicate the motives of promoters and underwriters and account for their activity in bringing the trusts into being.

Reasons for Formation of Steel Trust

One important combination, the United States Steel Corporation, was organised for somewhat different reasons. The combinations of previous years had concentrated the management of the iron and steel businesses of the country into a

few hands. The strongest and most aggressive of the steel manufacturers was Mr. Andrew Carnegie, whose plants were devoted partly to the production of materials to be made up into more finished forms by other manufacturers. During the year 1900 and the early months of 1901 the competition between the great steel companies assumed a very threatening aspect. The trusts were developing in a direction which made them less and less dependent upon the Carnegie Company for their materials, and Mr. Carnegie, on his side, was threatening to enter upon the manufacture of additional finished products. A steel-hoop plant was actually built by his company and plans were made for a large tube mill. All those interested, and especially the managers of the trusts, who recognised the superior organisation and efficiency of the Carnegie Company, shrank from the outlays which would have been involved in this threatened competition. It was estimated that plans under consideration in January, 1901, called for the expenditure of from $150,000,000 to $250,000,000 in the duplication of iron and steel plants for the sole purpose of wresting business from competitors. It was at this point that Mr. J. P. Morgan was appealed to to reconcile the conflicting interests by combining the earlier combinations and the Carnegie Steel Company into a billion-dollar trust. Mr. Carnegie himself appears to have been the least eager of those concerned for the combination. At any rate, he was induced to come in only on terms far more favourable than those accorded to any of his competitors. In this instance, combination resulted from the fear of the destructive effects of competition between companies which had already become so large as to make competition of that life-and-death order that has become familiar in connection with railroad enterprises. The combination was not accomplished, of course, without the assistance of an underwriters' syndicate, and the remarkable success of the Corporation during the years 1901 and 1902 made the profits of this syndicate large even in comparison with the returns from other successful trust operations. As much as $50,000,000, or 200 per cent., on the money they were actually called upon to advance, was divided among its members.

§ 269. That professional promoters had much to do with

Distrust of Trusts on the Part of the Public

the organisation of many of the trusts is indicated by their financial results. Of the 183 industrial combinations investigated by the Census Bureau in 1900, but 121 paid dividends. Moreover, of the ninety-two paying dividends on their preferred stock, only thirty paid also on their common stock. Thus one-third of the total number paid no dividends at all and another one-third paid no dividends to common-stock holders. The estimation in which business men hold trust securities is indicated by the relatively low prices at which the stocks even of those which have paid dividends since the date of their organisation may be purchased. United States Steel preferred, which is entitled to a cumulative dividend of 7 per cent., has never been quoted as high as par and in November, 1903, was quoted as low as 50, although dividends had been regularly paid on the common and large surplus earnings had been accumulated. Even the older trusts are still far from commanding the confidence of the public. In the year 1901 the stock of the Amalgamated Copper Company (the Copper Trust) fell from 130, its highest price in June, to 60½ in December. During the year as many as 11,826,038 shares of this stock, of which the total issue amounts only to 1,550,000 shares, changed hands on the New York Stock Exchange. In the same year the price of the common stock of the American Sugar Refining Company, one of the oldest and most ably managed of the trusts, fell from June to December from 153 to 103½. The sales of this stock aggregated 8,174,362 shares, or more than eleven times the total issue. These violent fluctuations in price, coupled with the large volume of dealings, illustrate fairly well the attitude of investors toward the trusts. Conservative capitalists avoid them altogether, and those who do purchase their securities are easily frightened into selling again by every unfavourable rumour.

The Successful Trusts

Striking as has been the failure of some of the recent combinations, it is not to be denied that the success of others is even more noteworthy. Confining attention to the three trusts that have paid dividends over the longest period of years, we may note the following facts: The Standard Oil Company paid dividends on its capital of $100,000,000 at the rate of 12 per

cent. from 1891 to 1895. In 1896 it paid 31 per cent., in 1897 33 per cent., in 1898 30 per cent., in 1899 33 per cent., in 1900 and 1901 each 48 per cent., and in 1902 45 per cent. The American Tobacco Company began paying dividends on its common stock at the rate of 12 per cent. a year in 1893. This rate was continued in 1894 and 1895. In 1896 6 per cent. and a 20 per cent. stock dividend were paid. In 1897 the rate on the enlarged capitalisation was 9 per cent. and in 1898 8 per cent. In 1899 7 per cent. and a 100 per cent. stock dividend were paid. Six per cent. on the increased capitalisation was paid in 1900 and 1901, and 9 per cent. in 1902. In addition, this company has paid continuously 8 per cent. annually on its preferred stock. The American Sugar Refining Company paid 4 per cent. on its common stock in the year of its organisation. The following year, 1892, it paid 10½ per cent., in 1893 21½ per cent., from 1894 to 1899 12 per cent. annually, in 1900 7¾ per cent., and in 1901 and 1902 each 7 per cent. This company has also paid regularly 7 per cent. on its preferred stock. Comment on the above showing is hardly necessary. Even on the assumption that all three of these enterprises were conservatively capitalised at the outset, their success far exceeds anything to be found in the annals of competitive business.

Extent of Control of Trusts over Production

§ 270. In every branch of production in which trusts have been formed in the United States, some semblance of competition has been preserved. Thus even the Standard Oil Company is said to control (January, 1903) only about 65 per cent. of the refined, and an even smaller proportion of the crude mineral oil production of the country. In his testimony before the Industrial Commission, Mr. Havemeyer, president of the American Sugar Refining Company, put the sugar output of the Trust, in 1900, at about 90 per cent. of that of all the refineries in the United States. Representatives of the United States Steel Corporation stated before the Commission that its product equalled from 65 to 75 per cent. of the total steel output of the country. Other testimony indicated that the United States Rubber Company produced 70 per cent. of all the rubber boots and shoes manufactured in the United States; that the International Paper Company produced 70 per cent. of the newsprint paper of the country; that the National Salt Company

controlled from 80 to 90 per cent. of the salt produced east of the Rocky Mountains; that the Pittsburg Plate Glass Company controlled about 72½ per cent. of the total output of plate glass; and, finally, that the National Starch Company produced 90 per cent. of the country's box starch. These figures are fairly typical of the trusts generally.

Resulting Control over Prices

Although not entirely without competitors, trusts which control 60 per cent. or more of the total supply of a commodity may unquestionably regulate its price within considerable limits and for considerable periods of time. Independent producers will compete with the combination by lowering prices only to the extent necessary to sell the output of their plants. As their product satisfies only 40 per cent. of the demand, the public must also purchase from the trust. The latter may put up the price, at least temporarily, to any point it pleases below that which so curtails the demand that the independent producers can supply the whole market. Independents will adjust their prices to the trust price, cutting under the latter only enough to insure the sale of the outputs of their plants. Any falling off in demand due to the higher price fixed by the trust will affect the trust's business, but unless the falling off is very marked, or the conditions are such that independents can quickly enlarge their producing capacities, the trust managers may for some time maintain the price and reap a monopoly profit. In case the trust desires to lower the price, on the other hand, it can compel independents to follow its lead, as it usually has a much larger producing capacity than it normally uses. Thus, President Havemeyer said of the Sugar Trust that while it actually supplied only 90 per cent. of the country's demand, it could supply 120 per cent. This flexible producing capacity characteristic of the trusts enables them to enforce lower prices even in the face of an active demand, or to prevent prices from rising when an increase in the demand would tend to elevate them.

Limits to this Control

In the exercise of its control over prices a trust must, of course, use great caution. Fixing the price considerably above the expenses of production invites competition, and if such a price is maintained it will only be a question of time when the trust's output shall become such a small proportion of the total

supply that its dominant position in the industry is lost. Establishing too low a price, on the other hand, means loss to the trust as well as to independent competitors. Though, generally speaking, the trusts can afford larger losses than independent companies, it is doubtful whether they can afford to sell below cost for a longer period than their rivals. Their resources are larger, but their losses on their larger sales would be proportionately greater. The usual result when a trust adopts the policy of selling below its expenses of production is not to bankrupt the competitor, but to persuade him to throw in his fate with that of the combination. Judging from the experience of the Sugar Trust, the terms on which losing competitors may be induced to enter a losing combination in the hope of establishing a profitable combination are not always unfavourable to the independents.

Conflicting Opinions in Reference to Trusts

It is a debatable question whether the control which the typical trust is able to exercise over price, because of the large proportion of the product which it supplies, increases or decreases with the passage of time. Some investigators maintain that the trust form of organisation is favourable to economical production, and that a well-managed trust, once launched, will dominate to an increasing extent the business with which it is concerned. Other writers argue that but for certain unfair practices, none of the trusts would be able to hold their own for any great length of time, and that the suppression of such practices would soon demonstrate that competition is an irrepressible force in a country in which an equal system of justice prevails. Still others go so far as to say that the force of competition is so persistent that not only the alleged economies resulting from combination, but also the unfair practices complained of are powerless to suppress it. They interpret the trust movement as a gigantic swindle perpetrated on the investing public by promoters and underwriters who have been favoured by a period of great industrial prosperity in their effort to make the trusts appear to be sound business enterprises. These writers see at every hand signs that the trusts are on the road to failure, and look to the next period of industrial depression for the proof of their theories. To decide intelligently between these opposing views, one must come to

some conclusion in regard to the economies in production which are credited to the trusts.

Economies Effected by Trusts

§ 271. In addition to the general economies resulting from large-scale production, and already discussed in Chapter VIII., Section 85, there are special advantages which pertain to combinations. One consideration favourable to the trusts is that after the first step separating the individual firm from the corporation with a salaried president or manager has been taken, there need be no increased loss of efficiency as the business grows. Since reliance for the direction of the enterprise is put in any case in salaried employees, it makes little difference whether these employees are few or many. An able president may hold the managers of the individual plants over which he has general supervision to as strict account for the efficient performance of their duties as that to which the directors hold him himself. The larger the enterprise the larger is the salary which it can afford to pay to its responsible manager and the abler the manager whose services it can command. It follows, it is claimed, that instead of losing in efficiency on account of its size, a trust gains in efficiency. The truth of this contention depends obviously upon whether the higher salary paid by a trust to its chief executive really secures the highest grade of ability. The three combinations which have succeeded most brilliantly have, undoubtedly, been directed with remarkable skill and foresight. They have devised plans for securing the loyal co-operation of their thousands of employees, and have selected for important positions the best men to be had for the tasks assigned them. The phenomenal success of the Carnegie Steel Company before it was merged into the trust furnishes an example of what may be achieved through organisation. As the result of thought and experiment, Mr. Carnegie and his associates devised methods by which every employee in every department of the business, from highest to lowest, was made to feel as keen an interest in the result of his day's work as though he were to be the sole beneficiary from it. High wages and salaries were paid, and the prospect of still higher remuneration was held out to all who could increase their productiveness. The result was a business which, in spite of its huge proportions—its earnings were said to be

$70,000,000 in a single year—compared in efficiency in every department with any other enterprise, large or small, to be found in that branch of industry. But the same circumstances that enable efficient chief executives to contribute so largely to the success of trusts increase the power for injury of inefficient managers. The presidents of the highly successful trusts have been willing to devote their unusual abilities to the great enterprises with which their names are identified because these were, in a real sense, *their* enterprises. The services of such men cannot be secured by the mere payment of high salaries. It is here that a serious obstacle to the permanent success of great industrial combinations is encountered. The few men who have the ability to direct such vast enterprises are increasingly in demand, and the chance that a board of directors which has chosen a president wisely once will do so again, and yet again, is small. These considerations suggest a reason for the phenomenal success of some of the trusts and for the no less meteoric failure of others.

Reduced Expenses for Advertising

A more certain advantage of trust organisation is economy in connection with the sale of products. A large part of the expenditure for advertising, travelling salesmen, etc., necessary to success in competitive businesses, is necessary simply because of the competition. The sale of whiskey and tobacco, for instance, is probably not increased materially by the hundreds of thousands of dollars expended annually on advertising. The sale of particular brands, however, is increased. A combination which unites all of the plants producing different brands under one management dispenses with the need for competitive advertising. The more complete the monopoly of the combination the more fully, obviously, it may economise, in this department of its business. The testimony obtained by the Industrial Commission teems with illustrations of this species of economy. It was stated that the American Steel and Wire Company dismissed nearly two hundred of its travelling salesmen, without any loss in efficiency. The whiskey combination dispensed with three hundred of its salesmen, and thereby effected an annual saving in salaries estimated by its president at $1,000,000. Other ways in which combination lessens expenses in selling goods were brought out by different wit-

nesses. Thus, the practice of giving premiums may be discontinued, as also that of granting credit to customers whose business standing is doubtful, in order to retain their trade.

Saving in Cross Freights

A third advantage, especially in connection with trusts producing bulky articles, is a saving in cross-freights. In the salt business, for example, the cost of freight is a principal item of expense. The National Salt Company, having wells in different sections, is able to fill each order from the plant nearest the town from which the order comes. It is thus able to supply salt at much less expense, the country over, than could a company whose wells were all in one place. The same principle applies in the iron and steel business. Thus an officer of the American Steel and Wire Company told the Industrial Commission that his company saved, by having plants at different points, at least $500,000 a year on its freight bill. This advantage does not apply, of course, to local competitors who aim to secure merely the local market.

Better Adaptation of Production to Demand

A fourth advantage is that trusts can adjust the output of their plants to the irregularities of the market better than smaller producers. Not only are they in a position to get a broader view of market conditions, but they may organise their different plants so that those in the smaller places, where the labour supply is less steady and reliable than in large cities, may be run continuously, while the latter may be run or shut down as the conditions of the market demand. Thus, the American Sugar Refining Company is said to use its Brooklyn Refinery as a sort of safety valve to its business. When the demand for sugar is active and the trust is understocked, its rate of production can be largely increased at a very small cost by running this refinery at top speed. In the face of adverse conditions a curtailment of production is equally easy.

Minor Advantages

Among minor advantages claimed for the trusts, as distinct from advantages enjoyed by all large-scale producers, is the ability to satisfy the different tastes of consumers by offering a varied stock of goods. This is believed to have been an important circumstance in connection with the success of the American Tobacco Company. A similar advantage is ability to supply on demand a practically unlimited quantity of any good. It is stated that the American Sugar Refining Company

is able to get one-eighth of a cent a pound more for its sugar than its competitors because jobbers prefer to order where they can be sure of securing at once all that they require. These various advantages which contribute in greater or less degree to the success of the trusts may be called legitimate, because they enable the trusts to perform the same services for the public more cheaply than could competing independent companies.

Illegitimate Practices of the Trusts

§ 272. Critics of the trusts charge them with three lines of policy that are squarely opposed to the general interest and therefore illegitimate. They are said to obtain discriminating rates from the railroads in defiance of the Interstate Commerce Act, to take advantage of their national position to cut prices at certain points in order to stifle competition while recouping themselves by maintaining prices at non-competitive points, and finally to make unfair contracts with jobbers and retailers under which the latter boycott the products of independent producers.

Obtaining Rate Discriminations from Railroads

The trust which has been most widely accused of securing special favours from the railroads is the Standard Oil Company. That such favours were commonly enjoyed prior to the enactment of the Interstate Commerce Act has been proved beyond question. Subsequently, according to the directors of the Trust, it has paid the same rates on oil as other shippers. Its critics do not deny this, but claim that it has continued by indirect means to enjoy many special advantages over its competitors. In the first place it has secured control of most of the important pipe lines conveying crude petroleum from the wells to the points where it is refined. In its management of these pipe lines it should be controlled by the law which requires common carriers to accord equal treatment to all shippers, but it is claimed that it constantly discriminates in its own favour. It is so much cheaper to pipe the oil than to ship it by rail that this gives it a marked advantage over its competitors in many of the most important markets of the country. Again, in consequence of the large scale of its operations the Standard Oil Company is able to maintain a full equipment of tank-cars, receiving tanks, and tank-waggons in all parts of the country and secures from the railroads lower rates for tank

than are charged for barrel shipments, often the only sort open to "independents." Finally it is alleged, though it cannot be said to have been proved, that the tank cars of the Standard Oil Company are sometimes underbilled so that the actual rate is considerably below even the favourable nominal rate. Obtaining discriminating freight rates has been charged against the Steel Trust also. Although little evidence of such discrimination has been furnished, attention has been called to the fact that the same men who are directors of the important railroads of the country are directors of the Trust. It is urged that it is not to be expected of human nature that men so placed will not make one hand help the other.

Price Discrimination among Places

More definite evidence is forthcoming in reference to the second charge, that is, that the trusts cut prices in local markets to kill competition, while they maintain or raise them in markets where there is no competition. The Industrial Commission made an exhaustive inquiry into the wholesale and retail prices paid in different towns in different parts of the United States for petroleum, sugar, and Royal Baking Powder. As a result of this inquiry it seems to be established beyond question that the Standard Oil Company charges different prices for the same product at different points, depending upon the intensity of competition. The investigation showed that on or about February 15, 1901, the price of a certain standard grade of refined oil was 6 cents per gallon at Chicago, and 5.5 cents per gallon at Detroit, Pittsburg, and other highly competitive points. The Chicago price had been maintained for some time and hence could fairly be assumed to cover the expenses of production to the Trust. Taking it as a basis, the Report shows that at Richmond, Va., the price had lately been cut to 5 cents per gallon in consequence of competition; that at Florence, Ala., on the other hand, the price was 10.5 cents although the freight rate from Whiting, where the Standard's large Chicago refinery is located, was only 2.8 cents. At Little Rock, Ark., the price was 11.5 cents, although the freight rate from Whiting was only 1.9 cents. At Denver, Colo., the price was 16 cents, although the freight rate from Whiting was only 4.9 cents. Similar discrepancies were found at other points, and although special circumstances may doubtless explain some of them, it

seems proved beyond a doubt that the policy of the Company is as alleged. Inquiry in refernce to the price-making practices of the other trusts was less conclusive. Direct interrogation of some managers indicated, however, that the practice of making special prices to fit special localities was not only common, but that it was looked upon as entirely proper and defensible. Mr. White, president of the National Salt Company, said that "Naturally, his company sold low where there was competition and recouped itself off of the general market." Evidence was presented indicating a similar policy on the part of the Continental Tobacco Company. Thus it was claimed, and admitted by the president of the company, that the American Beauty cigarettes were sold in North Carolina and Virginia for $1.50 per thousand, with 2 per cent. off for cash, while the same brand was sold in New York for a much higher price. Critics of the Trust alleged that the cut was part of an effort to drive out the Carolina Bright cigarettes manufactured by a rival company. This the Continental Company denied, asserting that the cigarettes referred to were sold for less than the Government tax for the purpose merely of introducing the brand. As a result of its inquiry the Industrial Commission concluded, "that it is probable . . . that the acknowledgment of similar practices would be made by managers of other combinations, but such testimony has seldom been given."

Unfair Contracts with Dealers

The third charge, that is, that some of the trusts constrain jobbers and local dealers to boycott other products, cannot be said to be proved in any large number of cases. This may be due, however, to the difficulty of getting the interested parties to testify, rather than to the infrequency of such practices. Two cases were investigated at some length by the Industrial Commission. It was claimed, and admitted by an officer of the company, that the Eastman Kodak Company, acting as agent for the General Aristo Company, sold the goods of the latter association at a 15 per cent. trade discount and an additional discount of 12 per cent. to dealers who handled only such goods. It was even admitted that the Eastman Company would probably not sell to dealers handling rival products. The other case was that of the Continental

Tobacco Company, which was charged with forbidding retailers who handled its brands of tobacco from dealing in other brands. It may readily be seen how a company controlling a large number of the favourite brands of a commodity like tobacco might, by pursuing this policy, prevent the public from acquiring a taste for other brands. As regards commodities which are to a less extent matters of taste, limiting dealers to trust products might not be of any particular aid to a trust in preserving its monopoly.

It needs no extended argument to prove that a trust resorting to the kinds of competition described above may make its position well-nigh impregnable so long as it contents itself with the modest monopoly profit of 48 per cent., which the Standard Oil Company distributed to its stockholders in 1900 and 1901. Such practices are as demoralising in their influence upon business and the standards of business men as are discriminations on the part of the railroads of the country, and like the latter they should be prevented at whatever cost to the Government.

The Tariff and the Trusts

§ 273. The view expressed in Mr. Havemeyer's striking phrase, "the protective tariff is the mother of trusts," merits some consideration. His argument is that the higher duties charged on many products in the tariffs of 1883, 1890, and 1897 permitted a margin of profit to domestic producers which encouraged the reckless duplication of plants and ruinous competition. To escape the latter, trusts were organised. If the tariff had not guaranteed immunity from foreign competition, no one would have cared to embark his capital in them. Once established, as a result of the artificial conditions created by the tariff, the trusts enjoy advantages over their competitors whenever that tariff is changed. In the United States sweeping changes in the tariff were made in 1890, 1894, and 1897. The changes were specially marked in the case of sugar. The Sugar Trust, even though it may have had no influence in determining the changes made in the sugar schedule, enjoyed the advantage of more intimate acquaintance with what was going on in Congress, and of a vast capital with which to make the most of the changes that were foreseen.

The Tariff the Mother of Some Trusts

That some of the trusts in the United States have been encouraged and fostered by the protective tariff few will deny. It is even probable that some of them have grown up in industries which would not have flourished at all but for the tariff. Others, doubtless, would not have been established had not the tariff been high enough to protect them from foreign competition. At the same time it is equally certain that many of the trusts have been organised in industries that are in no wise dependent upon the tariff. Some of the latter, notably the Standard Oil Company, have enjoyed greater success for a longer period than any of the tariff-made trusts. If further proof of the independent origin of trusts is needed it may be found in free-trade England where trusts are not unknown, although undoubtedly less numerous than in the United States. Mr. Havemeyer's dictum ought probably to be changed to the statement that "the tariff is the mother of some trusts." Wherever such maternity can be established a modification of the tariff may prove a sufficient means of control, but it is also true that some of the tariff-made trusts have outgrown their leading-strings and have now little to fear from foreign competition.

Other Evils: Overcapitalisation

§ 274. Among other evils charged against the trusts three merit special attention: they are overcapitalised, they corrupt public officials, and they ask excessive prices for their products. In Section 268 abundant evidence was given of the tendency to overcapitalisation. Trust organisers themselves do not deny that the combinations are capitalised often for two or three times the value of the tangible property which goes into them. They justify such overcapitalisation on the ground that, in addition to this tangible property, there are patents, the good will of the business, and the probable appreciation of certain kinds of property, such as mineral lands, to be considered. They urge further that the basis of capitalisation should be not tangible assets, but earning power. As regards most of the trusts there is no doubt that, even if full allowance is made for intangible assets, earning power, etc., there still remains a large amount of nominal capitalisation for which there is no equivalent in present or prospective value. Many trust promoters frankly admit the overcapitalisation

complained of, and take their stand on the proposition that overcapitalisation harms no one. They argue that it is indifferent whether the nominal capitalisation of a business is $1,000,000 or $2,000,000. If in the former case its stock is quoted at par, in the latter case, they assume, it will be quoted at 50 per cent. of par, and the only result will be that two shares are regarded as one share would have been, had the capitalisation been more conservative. Such apologists for overcapitalisation overlook important aspects of the question. While it is true that if all of the facts in the case were known to all of the parties interested, it would make little difference what the nominal capitalisation might be, this is far from true when, as is usually the case with the trusts, knowledge of the essential facts is confined to a small group of directors. At least three evils may be traced to overcapitalisation: It leads to the wholesale swindling of the investing and speculating public which still believes, in spite of many sad experiences, that the par value of stock bears some relation to its real value. It invites the deception of officials charged with the enforcement of tax laws. When nominal capitalisation throws no light on the value of corporate property for purposes of taxation, there is every opportunity for those interested to deceive assessors as to the real value that ought to be taxed. Finally, it encourages mismanagement on the part of the company itself. However much the stock of a company may be watered, it is but natural that its responsible officers should desire to pay dividends. In the effort to perform this often impossible task they are apt to adopt lines of policy of which they would not have thought had the business been conservatively capitalised and only reasonable earnings demanded of it. In the case of the trusts such mismanagement has injured the public as well as stock-holders in the enterprises affected.

Corruption of Public Officials

The second evil, that is, the corruption of public officials, is by no means confined to the trusts, but with them it assumes special significance. Trust managers have been accused of influencing legislation through contributions to campaign funds, of securing the election or appointment of officials favourable to their interests, of bribing attorneys-general to

refrain from enforcing anti-trust acts, and even of corrupting courts charged with the interpretation and enforcement of adverse laws. Proof of these accusations is rarely forthcoming, but this is believed to be rather because those possessing such proof have every interest to withhold it than because the accusations are altogether unfounded. As the control of the trusts and the railroads of the country comes to be concentrated in fewer and fewer hands, their corrupt political influence is only too likely to increase unless vigorous steps are taken to curb it.

Excessive Prices for Trust Products

The claim that the trusts charge excessive prices for their products is also difficult of direct proof. So many and such diverse influences affect the prices of commodities that it is almost impossible for those unfamiliar with every detail of the business concerned to judge whether a given price is or is not excessive. Notwithstanding these difficulties, an interesting investigation into the influence of the trusts on prices was made by Professor Jenks on behalf of the Industrial Commission. His conclusions were, on the whole, distinctly adverse to the contention of trust apologists that they reduce prices in consequence of the great economies they are able to realise. In the most notable instance of lowered prices under trust management, that of refined oil, it appeared that the reduction was less, on the whole, than the decline in the price of crude oil, and consequently that the margin retained by the trust to cover its expenses of production and profit was larger than it had been before the trust was organised. The dividends paid by the Standard Oil Company afford indirect support to this conclusion. Another case carefully investigated was that of refined sugar. Here it appeared that the margin between the price of the raw and the refined product fluctuated, but that, on the whole, the margin was reduced only as competition on the part of independent refiners became severe, and that as soon as a new combination was effected it was increased so as to afford larger profits to the Trust. Inconclusive though the above evidence is, its trend harmonises with what was to be expected on general principles. The trusts are organised for profit. One of the advantages claimed for them by their promoters is control over prices. To the extent that they exercise

monopoly powers, self-interest will lead them to obey the principles governing monopoly price. When economies in production do really result from their form of organisation, they may find it advantageous not to raise prices, or even to lower them somewhat, in order to enlarge the volume of their sales, or to discourage competition. They will not, however, find it to their interest to lower prices to a point which deprives them entirely of monopoly profit, as competitive businesses are forced to do by the stress of competition. It may be concluded that the desire of the trusts is to maintain prices at a monopoly level, and that if they fail to do so it is because they have not the monopoly powers claimed for them by their organisers. What the effect of trusts generally upon prices may be is thus bound up with the question as to whether the trusts generally succeed in actually controlling the branches of production in which they are organised, or whether they prove to be promoters' enterprises, which make little real difference in the competitive situation. It is quite clear from the earnings of some of the trusts that they have maintained prices comfortably above their expenses of production. The small earnings of others is equally eloquent proof of their failure to control the prices on which their success depends.

The Constitutional Obstacle to Legal Regulation of the Trusts

§ 275. Attempts to correct by means of legislation abuses charged against the trusts have encountered a familiar obstacle in the United States—constitutional limitations on the legislative power. Under the American form of government control over industrial enterprises is shared between the Federal and the State governments. The Constitution of the United States provides that Congress shall have control over commerce between the States. In interpreting this clause, the Supreme Court has defined interstate commerce as "intercourse and traffic between the citizens or inhabitants of different States," including "not only the transportation of persons and property and the navigation of public waters for that purpose, but also the purchase, sale, and exchange of commodities." It has further held that a failure on the part of Congress to regulate such intercourse and traffic in a particular way is to be taken as a declaration that such regulation is deemed inexpedient, and that the States are therefore debarred

from interference. With equal definiteness the court has indicated what is not included in interstate commerce. It has said very clearly that the business of manufacturing, among other things, is not so included. As a consequence of the interstate commerce clause of the Federal Constitution, and the interpretation given it by the Supreme Court, a peculiar situation has arisen. Congress has been unable to exercise any efficient control over the trusts because their primary purpose is manufacturing, and the interstate commerce in which they are engaged can be so carried on as to evade any prohibition yet devised, except such as would act as a serious check upon business generally. The States, on their side, have full power to control the trusts as manufacturing corporations, but may not interfere with any interstate commerce in which they are interested. Thus a State can prevent a corporation, organised as a trust, from carrying on manufacturing within its limits, but it cannot prevent a corporation having its plants in other States from shipping its goods to dealers within the first State and selling them, as the latter would be an interference with interstate commerce. Under these circumstances, effective control of the trusts by the States can only be secured when all are ready to unite on similar laws having this object in view. Up to the present time little progress towards such united action appears to have been made. As an offset to the drastic anti-trust laws of some of the States, others and notably New Jersey, Delaware, and West Virginia, have deliberately liberalised their corporation laws so as to afford an asylum for the trusts for the sake of the large revenue that is to be obtained from them. Before considering the ways in which the country may hope to free itself from this dilemma, something should be said of the common-law aspects of the question.

The Common Law

Legal basis for a certain amount of control over the trusts is found in the common law. It has long been held that certain "contracts in restraint of trade" are unenforceable at law and that "monopoly" itself is unlawful. Historically, "a contract in restraint of trade," in the legal sense, is a contract under which one party undertakes not to engage in a certain occupation under certain conditions. Not even all such con-

tracts are unlawful, and but for the fact that American courts are inclined to stretch the phrase so as to include under it all contracts having monopoly as their object, the prohibition would have little significance for the trusts. The phrase "monopoly" has also, regarded historically, a restricted meaning. It denotes exclusive privileges confirmed by charter, or "legal monopoly." Here, again, American courts have shown a tendency to break away from the historical meaning of the word and to use it in its proper economic sense. Although there is some difference of opinion among judges as to the scope of the common-law prohibitions against contracts in restraint of trade and monopoly, the tendency seems clearly to be to extend these terms to the more objectionable practices of the trusts. Many go so far as to say that the common law furnishes a complete remedy for the trust problem so far as the trusts present a problem.

Anti-trust Legislation

§ 276. Anti-trust acts were passed in Kansas, Maine, and Michigan in the year 1889. Congress followed in 1890 with the so-called "Sherman Anti-trust Law." Other State legislatures were not slow to fall in with the precedents so established, and by July 1, 1902, twenty-seven of the Commonwealths had anti-trust acts on their statute books. Some of these, like the Illinois Act of 1893, have been declared unconstitutional on the ground that they impose undue restraints on personal liberty. The Federal Anti-trust Act declares specifically that "every contract, combination in the form of a trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations," is illegal, and that "every person who shall monopolise, or attempt to monopolise, or combine, or conspire with any other person or persons to monopolise any part of the trade or commerce among the several States or with foreign nations, shall be deemed guilty of a misdemeanour." This prohibition, although intended to prevent industrial combinations, has been so interpreted by the courts that it only in rare instances applies to them. The original form of trust has been declared unlawful and suppressed and pooling contracts between competing manufacturers have been judged unenforceable; but all efforts to apply the Act to trusts organised as

separate corporations have thus far failed. As already stated, the courts define interstate commerce in such a way as to distinguish sharply from manufacturing and other industries those businesses concerned with the actual transportation and exchange of commodities. One result of this definition has been that the Act, which was aimed at the trusts, has been interpreted so as to apply chiefly to railroads and trade unions.

The anti-trust acts of the States have been even more sweeping in their provisions. Thus the Ohio statute, which went into effect July 1, 1898, and which has been widely copied, declares:

The Ohio Act of 1898

"That a trust is a combination of capital, skill, or acts by two or more persons, firms, partnerships, corporations, or associations of persons, or of any two or more of them for either, any, or all of the following purposes:

"1. To create or carry out restrictions in trade or commerce.

"2. To limit or reduce the production, or increase, or reduce the price of merchandise or any commodity.

"3. To prevent competition in manufacture, making, transportation, sale, or purchase of merchandise, produce, or any commodity.

"4. To fix at any standard or figure, whereby its price to the public or consumer shall be in any manner controlled or established, any article or commodity of merchandise, produce, or commerce intended for sale, barter, use, or consumption in this State.

"5. To make or enter into or execute or carry out any contracts, obligations or agreements of any kind or description, by which they shall bind or have bound themselves not to sell, dispose of or transport any article or any commodity, or any article of trade, use, merchandise, commerce or consumption below a common standard figure or fixed value, or by which they shall agree in any manner to keep the price of such article, commodity or transportation at a fixed or graduated figure, or by which they shall in any manner establish or settle the price of any article, commodity or transportation between them or themselves and others, so as to directly or indirectly preclude a free and unrestricted competition among themselves, or any purchasers or consumers in the sale or transportation

of any such article or commodity, or by which they shall agree to pool, combine or directly or indirectly unite any interests that they may have connected with the sale or transportation of any such article or commodity, that its price might in any manner be affected. Every such trust as is defined herein is declared to be unlawful, against public policy and void."

Futility of Anti-trust Acts

If this clause were literally interpreted, the act would, as has been well said, prohibit the most ordinary forms of business contracts. It proceeds on the assumption that combination is contrary to public policy and attempts the impossible task of restoring the world to that stage of industrial development in which every producer was independent and a competitor of every other producer. Fortunately the courts have not attempted literal enforcement, but in their efforts to give this and similar acts a reasonable interpretation they have deprived them of much of their significance. The experience of Texas, which succeeded in excluding the Standard Oil Company as a corporation only to have one of the paid agents of the latter come in, nominally as a private individual, and secure a large interest in the Beaumont oil field, is fairly typical of that of other States. It is the sober conviction of most students of trust legislation that the attempt to suppress the trusts has proved futile. Armed with New Jersey charters, the trusts have been able, by fair means or foul, to maintain themselves in most markets against the most stringent anti-trust acts. In the light of this experience, the opinion is becoming general that the solution of the trust problem lies not in repression, but in regulation.

The Present Status of the Trusts

§ 277. The period of prosperity which ushered in the trusts organised in 1898 and 1899 has continued since (July 1, 1903) and this makes any expression of opinion in regard to their power to withstand adversity hazardous. One of the most interested observers of the movement, Mr. Charles M. Schwab, the first president of the United States Steel Corporation, has declared emphatically that the trust which attempts to realise profits by maintaining or advancing prices, instead of by so perfecting its methods of production that it can undersell its competitors, is foredoomed to failure. His own combination gave point to this view during the years 1901 and

1902 by consistently opposing even such advances in the prices of its products as conditions seemed to warrant, and by taking other measures to prove to would-be competitors that cheap production, rather than monopoly, was what it aimed at. An example of the opposite policy has been afforded by the Copper Trust (the Amalgamated Copper Company), whose managers attempted to maintain the price of copper at the high level it attained during a period of active demand without much regard to the decreased consumption and increased production which naturally resulted. The sensational collapse of that Trust in December, 1901, seems to confirm Mr. Schwab's opinion. Of the older trusts, the American Sugar Refining Company seems far from master of the situation in the sugar industry, the American Tobacco Company is encountering active competition, and even the Standard Oil Company finds its stock quoted (July 1, 1903) some $200 under the highest price it has commanded. In nearly every branch of industry in which trusts have been organised, moreover, the number of independent producers has increased, and indications point to a recurrence of savage competition when the present period of prosperity comes to an end and depression once more forces curtailment of production through the familiar process of elimination. It would be premature to conclude from these facts that the monopolistic powers of the trusts are on the wane. Most of them look with slight concern on independent rivals so long as their own sales continue large and remunerative. When depression comes they will be tempted to adopt more aggressive tactics against their competitors, and only then can it be decided how far they still dominate the situation.

Reports now Required by National Government

An important forward step was taken by Congress in connection with the creation (Act of February 14, 1903) of the Department of Commerce and Industry. The Bureau of Corporations, included in this department, is charged "to make diligent investigation into the organisation, conduct and management of the business of any corporation, joint stock company, or corporate combination engaged in commerce among the several States or with foreign nations, excepting common carriers, . . . and to gather such information and data as

will enable the President of the United States to make recommendations to Congress for legislation for the regulation of such commerce." The Commissioner of Corporations, placed at the head of this bureau, is given the same ample powers in reference to the subpœnaing of witnesses, the examination of books, etc., as are enjoyed by the Interstate Commerce Commission. Finally, the publication of the information collected rests in the discretion of the President of the United States. It is too early to venture an opinion as to the success that is likely to attend this effort to exercise surveillance over the trusts. If they decline to furnish information on the ground that they are not engaged in interstate commerce, the issue will be squarely placed before the people of the United States, whether corporations which are national in the scope of their operations shall be permitted to escape national regulation. On the other hand, if they pursue the safer course and submit such reports as the Commissioner of Corporations requires, a fund of information will be collected within a few years on the basis of which more positive efforts at regulation may confidently be undertaken.

Plans for Obtaining Legal Control over the Trusts

§ 278. Under the system of divided powers created by the Federal Constitution, three possible ways of dealing with the trusts appear to be open. The plan which, if feasible, would be most certain to attain the desired object would be for Congress and the State legislatures to enact concurrent laws which would subject both the commercial and the manufacturing aspects of these businesses to similar restrictions. As already suggested, little progress has as yet been made in this direction because of the diverse interests which the different States have in the trusts. It may be dismissed as impracticable. A second plan for dealing with the trusts is to leave their regulation entirely to the States. Congress has power to control interstate commerce, and may, therefore, it is held, delegate such control to the State legislatures. If armed with full power over industrial combinations, the States, it is claimed, would be able to solve the trust problem independently. This proposal is open to the same objection as the preceding plan, and is also distinctly retrogressive. One of the chief reasons for assigning to Congress control over inter-

state commerce was experience of the narrow and selfish policies the States pursued so long as such control was left to them. To return to this condition of affairs, even with respect to the trusts, would be unendurable. On these grounds this plan, also, may be dismissed as inadequate.

Such Control should be Exercised by the Federal Government

Alternative to the proposal to vest exclusive control of the trusts in the State legislatures is the third plan, that of giving such control to Congress. This might be accomplished, of course, by constitutional amendment, but it is generally agreed that, at least for the present, an amendment having this object in view would have little chance of enactment. In lieu of this direct method, Congress might obtain control over the trusts by forcing them to incorporate under a Federal statute in which were prescribed such conditions as were deemed desirable. The powers under which Congress might legally compel the trusts to become national corporations are various. It might declare that no corporation without a Federal charter could engage in interstate commerce. Even the ingenuity of corporation lawyers would find it difficult to evade such a prohibition as regards some phases of the business in which every trust is engaged. If this policy seemed too drastic, it might impose a prohibitive tax upon the interstate traffic of State corporations, as was done to force State banks issuing notes to become national banks. Or it might make incorporation under the Federal statute a condition to the enjoyment by a corporation of the protection of the patent laws, which is an important privilege to most of the trusts. Finally, it might proceed against State trusts as it proceeded against lotteries, by forbidding to them the use of the mails. It can hardly be doubted that through one or other of these measures all corporations engaged in business which extended beyond the limits of a single State might be compelled to subject themselves to national regulation. The most serious objection to such regulation is that when it was once entered upon it could not stop until control over business relations, which in the American scheme of government has been vested in the States, was transferred almost in its entirety to Congress. Such a large proportion of the business of the country is now conducted by corporations, and such a large proportion of the corporations

extend their field of operations beyond the limits of a single State, that the policy considered would enormously increase the powers of Congress at the same time that it reduced to very low terms the powers of the States. Many persons shrink from such a radical departure from inherited traditions in reference to State rights and local self-government. Natural as is this feeling it seems destined to give way to the growing sense of national industrial solidarity and the conviction that businesses which are national in their scope must be regulated, if regulated at all, by national authority. Only in this way, it is believed, can the best interests of the whole people be safeguarded. This last plan of regulation appears, therefore, to be the only one that is both practicable and adequate to the situation.

Voluntary Federal Incorporation Advocated

Although not prepared to advocate compulsory incorporation under a Federal statute, many writers believe that the trusts should be given the opportunity of national incorporation. In pursuance of this idea, Mr. F. J. Stimson, counsel of the Industrial Commission, has drawn up the first section of a proposed national act of incorporation, which reads as follows: "Any corporation engaged in interstate commerce, or any number of citizens of the United States desirous of forming a corporation for the purpose of engaging in interstate commerce, either by transportation of persons or property or by other traffic or commerce among the States, may be organised as a Federal corporation under this Act, and as such may sue or be impleaded in the Federal courts, and such corporations shall not be subject to taxation under the laws of any State, except as to property actually within such State." Mr. Stimson believes that the privileges extended in the last clauses would induce many of the trusts to submit themselves even to rather rigid regulations. This proposal offers a safe means of testing the readiness with which the trusts would subject themselves to reasonable regulations, and ought perhaps to be acted upon before any more radical step looking towards national incorporation and national control is taken.

The Regulation Needed

Assuming the trusts to be brought squarely under Congressional control, as are the national banks and the interstate railways, we must consider the regulations which ought to be

applied to them. What these are was suggested in what was said of the illegitimate practices of the trusts.

Suppression of Practices Leading to Unfair Competition

The most important reform would be to so supplement the prohibitions of the Interstate Commerce Act that discriminations on the part of the railroads in favour of the trusts would altogether cease. This might be accomplished perhaps by making proof of the acceptance of such discrimination valid ground for the withdrawal of the charter of a Federal corporation. The second prohibition should apply to the making of discriminating prices either as regards different localities or as regards different purchasers. The trusts might be required to submit their price lists to the Commissioner of Corporations or some body similar to the Interstate Commerce Commission might be created to determine whether such prices were, comparatively speaking, just and reasonable, and therefore lawful. Finally, contracts under which dealers were required to boycott other than trust-made goods should be prohibited, and machinery should be created for making such prohibition effective. If all of these measures were taken, unfair competition, which has too often characterised the practices of the trusts in the past, might be suppressed.

Reform of Tariff on Trust Products

In addition to subjecting the trusts to control, as suggested above, it would seem to be desirable for Congress to revise the tariff so as to subject monopolistic combinations to the wholesome stimulus of foreign competition. Such changes are especially called for in the case of trusts which have secured control of the important sources in the United States of the raw materials which they use, as have, for example, the United States Steel Corporation and the International Paper Company. These businesses have many of the characteristics of natural monopolies so long as they are protected from foreign competition, and for this reason to withdraw the protection of which they are the beneficiaries would seem to be along the line of sound public policy.

The Future of the Trusts

§ 279. The general uneasiness excited by the growth of the trusts during the earlier years of the movement has, in the light of experience, somewhat abated. It is now recognised that the trust form of organisation is adapted to rather a limited number of businesses, and that only in a few cases can

combination actually succeed for any length of time in suppressing competition. At the same time, the reasons for the success of those trusts which have succeeded are coming to be more generally understood and public opinion is being educated to discriminate between the legitimate and illegitimate practices of the combinations. The future of the trusts in the United States depends very largely upon the promptness with which unfair methods of competition are prevented. If effective measures are taken to prevent rate discriminations on the part of the transportation companies, and price discriminations and unfair contracts with retailers on the part of the trusts themselves, it is believed that the movement towards combination will be checked, and that such combinations as continue to be effected will have back of them reasons not opposed to public policy. In the course of time some of the so-called industrial combinations are likely to evolve into out-and-out natural monopolies. The Anthracite Coal Combine appears already to have reached that stage of development. If the opinion of the officials of the company is to be accepted, the United States Steel Corporation is already virtually a natural monopoly as regards both its essential materials—iron ore and coking coal. Perhaps the International Paper Company is destined also to become a natural monopoly. In all such cases the public interest demands, not only publicity and fair dealing towards competitors as in the case of the trusts generally, but also power such as the Interstate Commerce Commission has, or ought to have, in connection with railway rates, to insist on just and reasonable prices.

Power of Substitution a Weapon for Controlling Monopolies

The most effective weapon wielded by the public for dealing with the trusts, as with other actual and potential monopolies, is the consumer's power to substitute other goods for those which the trusts enhance in price. As consumption and processes of production become more varied in their range, this power acquires wider scope. It already effectually precludes excessive profits to any very large number of businesses and limits the monopoly problem to those few services and commodities which remain indispensable to civilised existence, such as transportation facilities, coal, iron, petroleum, salt, sugar, etc. As time goes on, invention and discovery may still further

narrow the list of such articles and services, but probably never to such an extent as to make the monopoly problem one of little importance to the economist.

REFERENCES FOR COLLATERAL READING

* *Jenks*, The Trust Problem; Report of United States Industrial Commission, Vols. I., II., XIII., and XVIII.; **Meade*, Trust Finance; *von Halle*, Trusts or Industrial Combinations in the United States; **Clark*, Control of Trusts; *Gunton*, Trusts and the Public; *Nettleton*, Trusts or Competition; Report of Chicago Conference on Trusts (The Civic Federation, 1899); *Lloyd*, Wealth against Commonwealth; *Tarbell*, The History of the Standard Oil Company (articles in McClure's Magazine, 1903).

CHAPTER XXVI

PLANS OF ECONOMIC REFORM

Four Plans of Economic Reform

§ 280. The industrial system which has been described and analysed in the preceding chapters leaves much to be desired. We have now to consider different plans that have been suggested for its reform and to decide how far they are practicable. Because of limitations of space, we must confine our survey to the four proposals that seem, at the present time, to merit most serious consideration, that is, profit-sharing, labour copartnership, land nationalisation, and socialism.

Profit-Sharing

§ 281. One criticism urged against the present industrial system is that workmen, upon whose labour and fidelity the success of business undertakings so largely depends, receive no share of profits. Wages constitute usually their sole compensation, whether the entrepreneur who employs them is reaping large gains or incurring losses. To give workmen a keener interest in their work various expedients have been devised, all of which may be described as forms of profit-sharing.

Objections to the Sliding-scale System

One of the simplest methods of profit-sharing is that which causes wages to vary on a sliding scale with the price of the product. This has long been common in the mining and iron and steel industries of Great Britain, and is not unusual in the same industries in the United States. It is, however, open to grave objections, unless standard rates of wages are established as a minimum below which earnings are not to be depressed, no matter how low the price of the product may become. In every branch of industry prices are subject to variation and tend at times to fall below the normal expenses of production. The force which is relied upon to restore them at such periods is the unwillingness of entrepreneurs to continue production at a loss. Under the sliding-scale system, wages, a principal item among the expenses of production, fall as prices fall. The consequence may be that entrepreneurs can still

produce at a profit even when the price is too low to afford a fair return to wage-earners. Under such circumstances the force relied upon to restore prices is removed and they may for some time remain below the level which permits a fair competitive return to all parties. Of course, workmen will gradually withdraw from such poorly paid employments, and in this way the equilibrium may in time be restored, but it is also possible that in the interval whole groups may suffer a permanent lowering of their earning capacities and standards of living. A sliding-scale method of remuneration which has not as its basis minimum wages is thus a menace to the permanent well-being of the wage-earning class. Another objection to the sliding scale is that it assumes a constancy of relation between the price of the product and the amount of the profits that does not in fact exist. Thus, anthracite coal-mine owners in the United States objected to the application of the system to that industry by the award of the Strike Commission already referred to, on the ground that their expenses of production were growing each year heavier as the mines grew deeper, and that higher prices in the future would add nothing to their profits and consequently give rise to no fund to be shared with their employees. Whether this position was justified in this particular case or not, there can be no doubt that changes in prices are too inacurate indices of changes in profits to permit the extension of the sliding-scale system to many branches of business.

Objections to Sharing Losses

A less objectionable, if more complex, method of sharing profits is for the entrepreneur to appraise his own services as worth a certain wages of management and to agree to distribute all profits above this sum to his employees—including himself as salaried manager—in proportion to the wages which they respectively receive. Such a distribution of profits, if fairly carried out, offers the highest incentive to all employees to contribute their maximum to the success of the business. If anything, it errs on the side of being overgenerous to workmen, since they are guaranteed their wages whether there are any profits to distribute or not, whereas the wages of management of the entrepreneur can be paid only when profits equal at least to this amount have been realised. To obviate

this difficulty it has sometimes been attempted to scale down wages proportionately when losses result in businesses which have adopted the practice of sharing profits. Logical as such a plan may seem, it is open to the fundamental objection that it makes workmen suffer for the mistakes of their employers. So long as the former have no voice in the management of the business in which they are engaged, they may rightly demand standard wages. If the employer is willing to offer them in addition a share of his profits, they should and usually will show their appreciation by attending more carefully to his interests. They should not be asked to share losses, however, as this would interfere with that elimination of unfit employers upon which progress so largely depends.

Other Plans of Profit-Sharing

Besides the plans for sharing profits described above, there are dozens of others of varying degrees of complexity. In mercantile trade it is not unusual to compensate salesmen with a certain percentage of their gross sales in addition to their salaries. Corporations are increasingly in the habit of paying bonuses to their employees out of the profits of each year's business. Several of them have introduced elaborate plans, such as that of the United States Steel Corporation, for selling stock to their employees on favourable terms and paying them a premium in addition to the usual dividend on condition that they retain the stock and with it an interest in the success of the enterprise. Some of these plans have been adopted upon humanitarian grounds, but most of them are simply enlightened expedients for increasing the interest which hired workmen feel in the quality and quantity of their work. Modern business is a vast system of co-operation, and the principal criticism, from the point of view of production, that is to be urged against it is that the co-operation is so often grudging and half-hearted. Profit-sharing is a device for bridging over the gulf between employers and employees by making the incomes of both depend directly upon the amount of profits. When adopted as a supplement to the payment of wages at standard rates it merits only commendation. It increases the productiveness of labour by giving workmen a livelier interest in the results of their toil. It adds to wages and thus permits workmen to attain to higher standards of living at the same

time that it facilitates the accumulation by them of capital. Finally, it renders the relations between employers and employees more cordial, and in this way prevents strikes and lockouts. Those who object to profit-sharing do so on the ground that it is a mere palliative, when what is needed is a radical change in the present industrial system. To judge of the soundness of this criticism we must pass to a consideration of other plans of economic reform.

Labour Copartnership

§ 282. Labour copartnership, or "co-operation," as it is frequently styled, goes a step further than profit-sharing by making workmen partners in the businesses in which they are employed. It is a plan for dispensing with the services of the entrepreneur, or the risk-taker, and substituting for him a group of partners who both direct and carry out the undertakings in which they are engaged. Up to the present time labour copartnership has succeeded best in connection with trade, and especially retail trade. A brief description of its development in Great Britain, where it has enjoyed widest extension, will serve to introduce a discussion of its strong and weak features.

In Great Britain

Successful labour copartnership in England may be said to date from the year 1844, when the famous Rochdale co-operative store was founded by the twenty-eight "Rochdale pioneers." As the same form of organisation has been adopted by other co-operative stores in all parts of Great Britain since, a brief description of this store may be given. The needed capital was obtained by the issue of £1 shares to subscribing members, and on this investment 5 per cent. interest was regularly paid before profits were divided. Anyone might become an ordinary member on the payment of one shilling and was then entitled to trade at the store and receive a share of the profits *proportionate to the amount of his purchases.* The prices charged were about the same as those asked for similar goods in other stores and cash payments were required. Thus the advantage to the purchaser was the receipt every quarter of his share of the profits and the assurance that he was not being cheated in reference either to the quality of the goods bought or their prices. From a very small beginning the Rochdale store has grown to be a great enterprise. Within thirty years the number of members

increased to nearly 8000, the capital to nearly £200,000, the gross business to nearly £300,000 and the annual profits to over £40,000. The progress since 1874 has been continuous, and several manufacturing enterprises have been started and are now run in connection with the Store and its branches. There has been but one flaw in this development, and that is the abandonment by the Society of any pretence of dividing profits with employees. Its relations with the latter are like those of an ordinary business corporation, the co-operative feature being limited strictly to customers.

The English Co-operative Wholesale Society

The remarkable success of co-operative retail stores modelled after the Rochdale experiment emboldened the leaders of the movement to establish in 1864 the English Co-operative Wholesale Society for the purpose of buying jointly for retail co-operative stores on more favourable terms than they could secure by dealing with ordinary wholesalers and jobbers. The Wholesale was a success from the very start. By 1901 it had a membership of over 1000 retail societies and a capital of nearly £2,500,000, while its sales amounted to more than £7,500,000 and its profits to nearly £335,000. From buying its goods by wholesale from other manufacturers the Society soon passed to manufacturing for itself upon an extensive scale. It is now engaged in the manufacture of biscuits, cocoa, butter, preserves, sweets, boots and shoes, soap, candles, woollen goods, ready-made clothing, flour, lard, furniture, shirts, mantles, and undercloth-ing, and it does its own printing and that of many of its members. In its management of its manufacturing establishments, it, too, has pursued the policy of the ordinary business corporation. It pays good wages, but it accords to its employees neither voice in the direction of the enterprises in which they are engaged nor share in the profits. This fact must not be overlooked when the success of the English Wholesale Society is cited as proof of the possibilities of labour copartnership.

The Scottish Society

In 1868 The Scottish Co-operative Wholesale Society was launched on the model of its English predecessor. Its managers two years later introduced a profit-sharing feature, which has been retained ever since and to which the superior success of the Scottish Society is by some attributed. In 1901

the Scottish Society had over 600 members and a capital of over £1,500,000; its sales aggregated over £5,700,000 and its profits nearly £250,000. When it is remembered that the population of Scotland is less than one-seventh that of England the significance of these figures is evident.

Present Status of Labour Copartnership

In addition to the two wholesale societies described there were in Great Britain in 1901, 1462 co-operative retail societies, or "stores," with a membership of nearly 1,800,000, a share capital of £22,000,000 and profits aggregating over £8,260,000. Besides these co-operative trading societies there were a number of co-operative productive associations in England and Scotland in that year. Of these, 136 were manufacturing and 30 were agricultural. The combined membership of both was less than 35,000, however, and the profits on the year's business were only £187,000.

Reasons for Backwardness of the United States

In contrast with this remarkable development of labour copartnership in Great Britain there are in the United States but a few successful co-operative experiments. In mining districts and in factory towns successful co-operative stores are not unknown and in farming regions, especially in the Middle West, co-operative creameries are found, but taken altogether these experiments affect as yet but a small part of the business that is regularly carried on in the country. The reasons for this slight development are to be sought partly in the peculiar industrial conditions of the United States and partly in the circumstances that have confined the spread of labour copartnership, even in Great Britain, to trade and a few branches of manufacturing. Co-operative activity implies a certain degree of homogeneity of thought and feeling on the part of a population and this is, for obvious resons, less developed in the United States than in the older countries of Europe. It also requires a willingness to incur a good deal of trouble for the sake of the petty economies that are to be realised from dispensing with the middleman in business, and American workmen have not yet reached the point when they are willing to take this trouble. As time goes on local and national obstacles to the progress of the movement will give way, but there will remain the circumstances that everywhere limit labour copartnership to a few industries.

Reasons for Success and Failure of Co-operative Experiments

Co-operative stores are able to succeed because the service they render is of a very simple character. They are sure of their customers. They may insist on cash payments and in this way avoid losses through unwise extensions of credit. They need little initial capital and can usually obtain this without difficulty from the savings of workmen themselves. Through the growth of co-operation in retail trade, the "co-operative wholesale" is made possible, and through it in turn certain co-operative manufacturing industries may be developed. The English Co-operative Wholesale Society has, as already remarked, failed to apply the principle of labour copartnership to its relations with the employees in its manufacturing departments, and the reason for its policy are not far to seek. Successful manufacturing requires intelligent and progressive management and large capital. Workmen rarely appreciate the importance of the first or are in a position to supply the second. The consequence is that only in exceptional cases does labour copartnership succeed in manufacturing. When the capital is forthcoming, there is almost certain to be before long a disagreement in regard to the business management. As submission to the judgment of the salaried manager must, in the nature of the case, be entirely voluntary, disagreement is only too apt to lead to insubordination and disruption. Even when capable managers are secured, therefore, efficient control of a labour copartnership can hardly be maintained for any great length of time. But the chances are strongly against securing efficient managers because the workmen partners usually object to paying sufficiently high salaries. The common view was tersely expressed at an English co-operative congress by a delegate who declared he had never yet seen a man whose services were worth £500 a year. With such an opinion of the value of business organisation and management labour copartners must soon be worsted in competition with independent entrepreneurs. The difficulties in the way of securing capital for enterprises which require—as do many branches of manufacturing—investments of more than $1000 for each employee are obvious. Few workmen have so much to invest, and those who have are likely to be particularly timid about risking it in untried fields.

On the other hand, few capitalists care to lend their savings to labour copartners.

The Future of Labour Copartnership

Labour copartnership is an admirable substitute for the competitive system whenever and wherever it can succeed. It appeals to higher motives than mere self-interest and its influence upon the character of those who engage in it is broadening and ennobling. As time goes on its extension to ever wider fields may be confidently hoped for, but such extension must necessarily be gradual. All of the conditions upon which its successful operation depends—a fuller appreciation by workmen of the value of the services of business managers and organisers, a willingness on their part to take orders from bosses of their own choosing, and finally an accumulation by them of capital—must be of slow growth. This does not lessen in the least the importance of labour copartnership as a plan of economic reform, but it shows the extent to which the present industrial system is adjusted to the character and attainments of the average man of the present day and emphasises the truth that it can be displaced only as the average man is raised to a higher plane of thought, feeling, and efficiency.

Land Nationalisation

§ 283. Profit-sharing and labour copartnership are plans of reform that may be and have been introduced without any change in law or in the functions of the state. Their extension depends upon purely voluntary methods, and their success may be gauged by their ability to hold their own in competition with other forms of business organisation. Quite different is land nationalisation, the plan of reform now to be considered, since it proposes a fundamental change in the present industrial system, the abolition of private property in land. The grounds for this proposal have already been suggested in the analysis of production presented in earlier chapters. As there shown, one of the factors in the creation of wealth is land and the natural powers associated with it. These are, broadly speaking, gifts of nature to man whose services contribute a share to the value of the product distinguishable in thought from the shares due to labour and to capital. In return for these services the income which we have called rent is paid to landowners. In the view of ad-

vocates of land nationalisation this income is "unearned" by the private landowners who receive it and ought in justice to be diverted to the use of the whole community, either by means of taxation or through the outright confiscation of land by the Government. In order to determine the merits of this plan of reform we must consider the grounds which have, to the minds of thoughtful persons, justified the system of private property in land for so many centuries and the results that would be likely to follow such a radical change as that proposed.

Advantages of Private Property in Land in Great Britain

Private property in land was adopted in Great Britain after centuries of experience of a kind of communal ownership. The latter was found to be deadening to enterprise and progress because it compelled the adoption of uniform methods of cultivation by the members of each rural community and because it offered no adequate incentive to those large plans of improvement, such as the draining of marshes and the introduction of artificial fertilisers, to which English agriculture has owed so much. It is true that the system has had its dark side in that the transition to it afforded an opportunity for much fraud and injustice, and in that it has resulted in the formation of great hereditary estates owned by absentee landlords. Even with these drawbacks, however, it is believed that the introduction of private property in land has resulted in national gain, and if measures had been taken, as they might easily have been, to prevent these evil results, the beneficence of the change would not admit of question.

In the United States

Even without the precedents established by European countries, it is highly probable that the early settlers of America would have adopted private property in land as the only system adapted to the conditions of a new country. To attract colonists it was necessary to offer them every inducement. Guaranteeing them in the ownership of such land as they were able to reclaim from the wilderness and defend from the Indians seemed a small enough return for the hardships and privations which they were required to endure. Of course land was also secured at times on terms that had little regard to the general interest, but, on the whole, the results of the system have abundantly justified it. Even at the present time, the best sense of American statesmen cordially approves the

principle of the Homestead Act, under which settlers may secure limited tracts of land from the Government practically free of charge. The liberal land policy which the country adopted and has adhered to from the earliest period of settlement has been a chief factor in the rapid settlement of the American continent. Unwise as it may have been in some of its details, it can hardly be doubted that it has been, in its main features, sound and beneficent.

The Present Problem

§ 284. An historical justification of private property in land is quite a different thing from a demonstration that the system must endure until the end of time. At some period it is quite certain that this system, like others that preceded it, will cease to be adapted to industrial conditions and will need to be modified, if the best interests of society are still to be served. We have now to weigh the truth of the claim of advocates of land nationalisation that this period has already come for the countries of the Western World.

Evils of Absentee Landlordism

The principal advantages of private property in land are realised only when the owner is at the same time the occupier or cultivator. Under these conditions self-interest insures in most cases the most economical and progressive utilisation of the land attainable. When, on the other hand, the owner is an absentee landlord, who leases the land to the occupier or cultivator, it can make little difference whether he is the administrator of a private estate or an official of a well-organised government. In either case the actual use made of the land must depend upon the efficiency of the lessor and the terms of the lease. It follows that the suitability of the present system of private property in land to present conditions hinges upon the question whether absentee landlordism both in town and country is coming to be the rule or whether this condition is still exceptional.

The Situation in the United States

Space will not permit an exhaustive analysis of the actual situation even in the United States, but a few facts may be mentioned as proof that, in this country, at least, absentee landlordism is still exceptional and occupation or cultivation by the owner the rule. According to the census of 1890, 72 per cent. of the 4,565,000 separate farms in the country in that year were operated by their owners. The percentage had decreased

to 65 in 1900, but owing chiefly to an extension in the Southern States of the system of cultivation "on shares" which has the one advantage that it insures the owner's continued interest in the methods of cultivation practised by the tenant.

In towns and cities the situation is far less favourable to the present system of private property in land, although few exact figures in reference to it are available. Moreover there is reason to think that, especially in large cities, absentee landlordism is becoming more and more the rule, for the simple reason that more and more people are coming to live in tenement and apartment houses.* If this is the case, there may be good ground for the contention that the system of private property in land is ceasing to serve any useful purpose in cities which the system of public ownership would not serve as well and that the time is ripe for a gradual transition to the latter.

The Single Tax

§ 285. The plan for diverting the income we have styled rent from private landowners to the Government that has attracted most attention in the United States is called by its advocates "the single tax," a name given it by its author, Mr. Henry George, in his widely read book *Progress and Poverty*. Before we consider the practical aspects of the land question a few words should be said about this work and its proposal. Mr. George's avowed purpose in writing *Progress and Poverty* was "to seek the law which associates poverty with progress and increases want with advancing wealth," and in it he attempts to prove that this law results from the institution of private property in land which, he believes, causes the benefits of progress to redound to the exclusive advantage of landowners. Diverting these benefits to the whole community by means of a "single tax" on land rent would, he thinks, "raise wages, increase the earnings of capital, extirpate pauperism, abolish poverty, give remunerative employment to whoever wishes it, afford free scope to human powers, lessen crimes, elevate morals and taste and intelligence, purify government, and carry civilisation to yet nobler heights." The argument by which he arrives at this

* Already in New York City but one family in nine owns its place of residence.

gratifying conclusion is far too elaborate to reproduce in brief compass, and this is the less necessary because there is no evidence of the truth of the law for which he seeks an explanation and whose existence is vital to his whole contention. Poverty has undoubtedly persisted in spite of progress, but that it has increased with progress is directly contrary to the fact. Equally unwarranted is the assumption on which his conclusion rests that every improvement in productive power tends to increase rents. This could only be the case if the population of each country had an absolutely rigid standard of living and responded to every improvement by multiplying until the margin of cultivation was lowered to a point at which wages were no higher than before. If such were the fact, the true explanation of the increase in rent and the persistence of poverty would have to be sought not in the appropriation of rent by landlords, but in the unprogressive character of the people generally, and it is not at all clear how the situation would be helped materially if all rent went to the Government and if all other taxes than that on rent were abolished.

Henry George's extreme claims, both as to the need for a radical remedy for present economic evils and as to the benefits that would result from his "single tax," seem extravagant, even to the point of absurdity, but his proposal ought not to be dismissed on these merely negative grounds. The influence which *Progress and Poverty* has exerted over its hundreds of thousands of readers has been due, not to the novelty or profundity of its argument, but to the sincere desire to benefit humanity which so clearly inspired the author in its composition. The plan suggested should be considered in no meaner spirit, that is, with sole reference to its social utility.

Objections to the Single Tax: It is Inadequate

§ 286. The first objection to the "single tax" refers to the contention of its advocates that it would prove adequate to the fiscal needs of every community at every stage of its industrial development. The point would be of minor importance did it not illustrate how largely belief in the "single tax" rests on faith rather than upon reason. As shown in previous chapters the amount of rent depends upon differences in the productiveness of different pieces of land and the location

of the margin of cultivation. In a prairie region differences in fertility are much less marked than in a hilly country. Thus, in equally populous areas in different parts of the United States, great differences are found in the size of the aggregate rent fund. The needs of such regions for revenue for courts, jails, roads, common schools, etc., have little relation to these differences. Moreover the more intelligent and the more social the population becomes the keener will be its appreciation of common needs and the larger the fiscal requirements of the government which ministers to such needs, but these again have no connection with the size of the rent fund. It follows that the need for public revenue is little, if at all, related to the circumstances that determine the size of the rent fund and if the appropriation of that fund by means of taxation should, by chance, just pay the expenses of government at one time, it would be very certain to fall short of or to exceed the amount needed for this purpose at a subsequent period. The contention that a tax on rent would by itself meet all of the requirements of government at all times may thus be dismissed as visionary. Even could it be shown to be an excellent tax, to depend upon it as the *single* tax would be the height of folly.

It Would Involve Wholesale Confiscation

The next objection is more fundamental and applies to all plans involving the diversion of land or the income it affords to the common benefit. Such policies amount to confiscation and can only be justified on the ground that they are absolutely essential to general well-being. For centuries the law has permitted the private ownership and enjoyment of land. Pieces of land have changed hands on the average dozens of times in the United States, and present owners have in most cases acquired them not as free gifts of nature nor as grants from the Government, but by paying for them, just as they have had to pay for other species of property. To deprive them of their lands, or what amounts to the same thing, of the income which these lands afford, would be to commit a monstrous piece of injustice. Such injustice might possibly be countenanced if there were any rational ground for sharing Henry George's expectations as to the results of such a policy, but in the absence of such ground it

must be condemned in unqualified terms. A state which would thus overturn an established institution, and confiscate by wholesale the property of its citizens, would lose the confidence of those citizens and be reduced to a condition of anarchy bordering on civil war. Any increase in public revenue or reduction in other forms of taxation so secured would be bought at far too high a price.

Impossible to Administer

The third and last objection to the single tax is administrative in character. Although the rent of land may be distinguished in thought from interest on capital invested in the land, it is often impossible to distinguish it in practice. As already pointed out, permanent improvements to land, such as draining marshes, or filling in hollow places or levelling down elevations to adapt lots for building purposes, become indistinguishable from the land itself. For the government to appropriate the entire income from improved land would be for it to place a ban upon further improvements. For it to appropriate only the true economic rent would, in many cases, be impossible, as there is no means of calculating exactly the amount of that rent. Thus the carrying out of the single-tax programme is confronted by serious practical difficulties.

Peculiarities of the Land Tax

§ 287. As indicated in a previous section, the present land system appears in its least defensible form in connection with city real estate. We have now to inquire whether any change in this system short of outright confiscation is both practicable and desirable. In the opinion of the author there is such a change, but before describing it, it will be necessary to call attention to some of the peculiarities of a tax upon land.

Land and Improvements Should be Distinguished

For reasons which cannot be enlarged upon, municipal governments are largely dependent upon the tax upon real estate for their revenues. In the United States this tax is assessed usually upon the land and the buildings it supports, without any attempt to distinguish between the two. This is highly objectionable because the effect of a tax on land is very different from that of a tax on buildings. The latter tends to discourage investment in that particular form of property until the income which buildings afford is large enough to cover interest at the usual rate plus the tax. Taxing buildings thus discourages building and acts as a check on improvements.

The tax on the land itself acts differently because the land supply does not, broadly speaking, depend upon human will or human forethought. It is a gift of nature. What the government takes comes out of the rent of the landowner. He cannot shift it to the tenant because the latter is paying him already all that the comparative merits of his particular piece of land are worth. To attempt to do so would be to drive the tenant to a piece of land slightly lower in the economic scale, which is always possible because at the outer margin there is land which, under existing conditions, is not in use at all. The tax on land is thus a tax on rent which landowners must pay; the tax on buildings, a tax on a particular form of capital which in the long run users of such capital, that is, occupiers, must pay. The latter discourages building or improvement, while the former has no such tendency.

The Capitalisation of a Tax on Land

Having distinguished real estate into land and improvements on land for purposes of taxation, it would be highly desirable for municipal governments to gradually reduce the tax on improvements by increasing the tax on land. But here a special obstacle is encountered. As already explained, land is valued usually by reference to the income it affords. The net rent is capitalised at the current rate of interest and the result is the value of the land for purposes of investment. In calculating the net rent one of the deductions that must be made from the gross return is for taxation. Thus if a piece of land affords a gross rent of $6000 a year and of this $1000 is taken by the government, the net return is only $5000, which represents interest at 5 per cent. on $100,000. The tax rate in this case would be 1 per cent. on the valuation of $100,000. If the tax burden is increased to $1200 a year, the net return is reduced to $4800, which represents 5 per cent. on a valuation of only $96,000. The new tax rate is only 1¼ per cent., as compared with the previous rate of 1 per cent., but the consequence to the landowner is that the selling value of his property is immediately reduced by $4000. As this illustration shows, any change in the proportion of the gross return from land that is taken by the government through taxation is immediately capitalised and deducted from the selling value of the land. The consequence is that the whole burden of an in-

crease in the tax on land falls normally upon the present owners. They cannot shift it to subsequent purchasers for the same reason that they cannot shift it to their tenants. Thus an increase in the land tax is opposed by landowners as peculiarly onerous to them and is only to be made in response to some pressing public need.

Burdenless Taxes

The same circumstances that cause new taxes on land to be specially burdensome cause old taxes to become in time practically burdenless. Each new owner of the land buys it with the clear understanding that the tax must be paid. The price he gives for the land makes full allowance for this deduction, being based on the net rather than the gross return which the land is capable of affording. The tax thus comes out of a part of the rent which the new owner had no expectation of receiving himself and its payment is accepted as a matter of course. It follows that no tax is collected with so little friction as a land tax which has been invariable in amount over a long term of years, while at the same time no tax is so bitterly opposed and is really so burdensome as an addition to the prevailing land tax. The former comes out of the rent fund and imposes no burden on landowners who have acquired their holdings after the tax was imposed; the latter falls entirely on the persons who own land at the time it is imposed and amounts to a partial confiscation for public purposes of their property. The problem which confronts the tax reformer who believes in drawing more largely on the rent fund for public purposes is to increase the land tax without imposing too serious a burden on present owners.

The Arguments for Inheritance Taxes

§ 288. The method of increasing the land tax in cities, which the author would suggest, is connected with a plan for the taxation of inheritances. Every thirty or thirty-five years, on an average, the private property in existence passes by inheritance to a new generation of owners. Several considerations justify the state in interposing its authority at such periods of transition to take for public purposes a certain proportion of the property left at death. In the first place the arguments which make it desirable to protect owners in the control over their possessions during their lives largely lose their force at death. The execution of wills, which depends upon the state

itself, should always be made conditional on their conformity with the public interest. Secondly, the public interest is opposed to the accumulation of vast hereditary fortunes. Parents should be encouraged in every way to provide amply for their children according to the standards of living to which they have accustomed them, but parental affection is rarely satisfied with such provision. Although reason and experience both suggest that children will be really better off and enjoy happier lives if they are not too well provided for, mistaken social standards and misdirected ambitions for family dominance cause wealthy parents constantly to bequeath to their children more than it is socially desirable that the latter should receive. Thirdly, it frequently happens that men and women of wealth are really at a loss to know how to dispose of their property at death. That this is the case is indicated by the number who die without making wills. These and other considerations are accepted in most progressive countries as adequate justification for inheritance taxes. In the United States such taxes are properly assessed by the State governments, since it is under the direction of the State courts that wills are executed and estates administered.

Plan for Combining Inheritance and Land Taxes

The step in the direction of land nationalisation, or more properly municipalisation, that the author would suggest involves, first, the adoption by all of the States of the plan already in operation in Pennsylvania and virtually in New York of relieving real estate entirely from taxation for State purposes and, secondly, the introduction of the method of assessing land and improvements on the land separately for purposes of taxation, as is already done in Massachusetts and in New York City. Given these conditions, it is proposed that the State inheritance tax which applies indifferently to all property be modified so as to involve a certain deduction from the value of the personal property and improvements on land included in a decedent's estate for State purposes and a corresponding addition to the local tax rate on land so included. Thus if the inheritance tax in a given case were 5 per cent. and the current rate of interest also 5 per cent., the plan would contemplate in place of the deduction of this amount from the value of the land to pass by inheritance, an increase of ¼ of 1 per cent.

in the local tax rate applying to it, which would have exactly the same effect so far as the heirs are concerned—that is, would subtract $5 from each $100 of the value of the land—and would secure for the municipal government a permanently larger share of the income to which the land gives rise. By this means the rates of taxation on land generally might be gradually, although unevenly advanced, and municipalities might be enabled to relieve improvements on land from the burden of taxation now imposed upon them. The most serious objection to the plan is that it would put an end to uniformity in the rate of taxation applying to different pieces of land and complicate greatly the task of tax assessors and collectors. How much this would add to the cost of administering the real-estate tax cannot be calculated in advance, but since it is already necessary to keep a separate record of each separately owned piece of land for purposes of taxation, there seems no reason to think the addition would be a bar to the adoption of the plan. Its great merit is that it would gradually shift the tax burden to the point where it would be felt least and at the same time add to the taxable resources of municipalities, the branches of government which at present find it most difficult to secure the revenue imperatively needed for public purposes.

Conclusion

Advocates of the single tax, or of other plans for securing for the common benefit the rent fund, will object to the above proposal as far too slow and awkward in operation to suit their purpose. It is suggested because the author is impressed with the truth of the contention that rent is a peculiarly fit object of taxation, while he repudiates any proposal which contemplates the wholesale confiscation of the property of landowners on the specious plea that the income which land affords is "unearned." Such income is in truth accounted for by reference to the part which nature plays in production, and from the point of view of society collectively nature renders her services gratuitously. From the point of view of present landowners, however, the incomes they derive from their lands are no more "unearned" than those they derive from other property which they have bought and paid for with their savings, or inherited from their parents.

Socialism

§ 289. The last and most radical plan of economic reform

is what we have designated as "socialism." As the term is here used, it refers to the proposal to reorganise industrial society by transferring to the state, or its agent, the government, control over land and the instruments of production, which we have called capital goods, and by confining private property to the things which minister directly to the satisfaction of wants, that is, consumers' goods. As owner of all land and capital the state would also be director of all industrial undertakings. All business managers and workmen would become government officials, employed in government enterprises and remunerated according to some plan prescribed by the government. Private initiative and competition in industry would be superseded by state initiative directed by the special departments of the government entrusted with the management of industrial affairs.

Communism

Although agreeing on these main points, socialists differ widely as to the details of the industrial system which they propose and also as to the means by which it is to be realised. One group, which we may conveniently designate as "communists," advocates an equal *per capita* division of the products of industry, the latter being valued in proportion to the units of labour time involved in their production. Another group recognises that the needs of different individuals differ as widely as do productive capacities and defines as its ideal "production by each according to his capacity and distribution to each according to his need." Still others content themselves with the optimistic prediction that under socialism there will be a superabundance of goods of all kinds and that the problem of distribution will consequently offer no difficulties.

Plans for Realising Socialism

As regards means of realising socialism, one group, which we may designate as the revolutionary socialists, looks forward to a general uprising on the part of the masses who will first obtain control of the government, then confiscate all land and capital goods, and finally inaugurate the system of state-directed industry. Another group condemns revolutionary measures and looks forward to a gradual transition to socialism through a step-by-step extension of the functions of government, to be defended at each stage not by any pre-

conceived preference for socialism, but by the exigencies of each situation. Still another group looks for the new system as the result of a revolutionary, but entirely voluntary change approved by all classes, because the competitive system will have become intolerable. These differences as regards both the ideal in view and the means to its attainment render difficult any general characterisation or criticism of socialism as a plan of economic reform. In what follows we must content ourselves with reviewing some of the advantages claimed for socialism and some of the practical difficulties which oppose its introduction.

Economic Advantages of Socialism

§ 290. The advantages claimed for socialism are both economic and moral. In contrast with the present system of production, which is wasteful and haphazard, it contemplates a system under which the economic needs of the community will be accurately estimated and the available land, labour, and capital carefully apportioned, so that just the quantity of each kind of good required will be produced. The duplication of plants and the excessive production of particular goods, now so common, will be avoided, the expenses of advertising and competitive selling will be saved, and finally the production of goods that are harmful rather than beneficial to those who consume them will be suspended. As a consequence of these improvements on present practices there will be, it is claimed, an immense saving of productive power, which may be utilised either to add largely to the volume of goods produced, to shorten the hours of labour, or to combine both advantages to the benefit of mankind both in its consuming and in its producing capacity.

Moral Advantages

The moral advantages claimed for socialism are even more noteworthy. Instead of depending upon self-interest as a spur to industrial activity, socialism relies upon the love of activity for its own sake, the desire to contribute to the common good, the sense of duty in the performance of tasks that are largely voluntary, and the ambition to win social esteem and social distinction through conspicuous social service. It is labour copartnership extended and systematised to embrace the whole industrial field and has the same moral advantages over competition as has conscious co-operation. Under socialism all

men would live literally as brothers, sharing in the common toil, and enjoying each his portion of the fruits of that toil.

Objections to Socialism

§ 291. It is unpleasant to contrast the socialistic dream as it is unfolded, for example, in such a work as Bellamy's *Looking Backward* with the hard facts of life and of human nature, but no less drastic a course can serve to present in their true light the obstacles in the way of the realisation of socialism. Men as they are are fond of activity for its own sake, to be sure, but not usually of the sort of activity for which they are best fitted in their rôle as producers of wealth. If this motive were alone to be depended upon, not ten in a hundred would be likely to declare themselves in favour of useful forms of activity. The other ninety would content themselves with pure play, finding their satisfaction in it partly, it must be confessed, because it is entirely dissociated from any productive result. The desire to contribute to the common good would, doubtless, hold a larger number to the tasks best suited to their capacities, but the slight extent to which this desire is developed must impress anyone who observes the conduct of people towards forms of public property, like parks and monuments. The horizon of the average man is still painfully limited and the sacrifices he is willing to make for the vague public beyond his family and immediate circle of friends is small, except in moments of excitement when his social consciousness is aroused out of its habitual lethargy. The sense of duty is also a motive that could not safely be relied upon to hold many men to the monotonous daily round which is necessary to efficient production in many, if not in most departments of industry. Finally, the desire for social esteem and social distinction, which is certainly strong in the average man, is neutralised as a motive to industrial activity because, as a matter of fact, public opinion is very undiscriminating in its judgments. It rarely accords applause where and at the time applause is due, and it is very apt to reward with its approval quite unworthy candidates for its recognition. Some system of graded honours, like decorations or titles, might be devised, similar to those already in vogue to reward men for signal services on the field of battle, but that these would hold the rank and file of the industrial army to their tasks in the ab-

sence of other incentives will hardly be claimed by anyone. It is believed that these considerations admit of but one conclusion, namely, that the motives to industrial activity on which socialism relies are all too weak and that compulsion would have to be called in to supplement them if the system was to be put into practical operation. But compulsion is tyranny, and whether practised by a selfish despot or by an enlightened majority seeking only the general good, must react disastrously on the character of those concerned in it. Until socialism can be realised without it or without more of it than is now necessary to keep the enemies of society in order, its moral superiority over the present competitive system may well be questioned. At some future time, when men and women of a higher type compose society, socialism may prove practicable, but it does not seem to be adapted to men and women as they now are. And, it may be added, when human beings are so perfected that the motives on which socialism relies are dominant, it will make little difference what form of industrial organisation is adopted. Competition among such individuals will be, as it is now at its best, merely a generous rivalry between upright and fair-minded men, tempered by regard for the interests of others and restrained by legal prescriptions. Such competition might result in industrial relations as ideally perfect as those pictured in connection with socialism, and if these relations do not now prevail it is not because of the industrial system under which we live, but because of the imperfections of the men and women who compose society.

Difficulty of Apportioning Labour Force Economically

Although less serious than the psychological obstacles to the realisation of socialism, the administrative obstacles are sufficiently formidable. A few of them only will be referred to: Assuming a population disposed to give socialism a fair trial and the government in control of all land and capital goods, a first difficulty would be in connection with the assignment of occupations to individual citizens. The interests of production would require a certain quota of workmen in each department of industry. But how, in the absence of compulsion, could these quotas be secured? Under the present system the division is accomplished by the simple operation of

the law of demand and supply. Branches of production that are inadequately manned attract more workers by offering them somewhat higher wages than are paid in other occupations. What corresponding inducement could be offered under socialism? Is it not probable that in the absence of compulsion or of wages apportioned to the competitively determined value of the service rendered, certain employments would attract many more workmen than were needed while others would be avoided? One writer has suggested that the distribution of the available labour force could be accomplished by shortening the hours of employment in unpopular occupations until they attracted their quota of workmen. This might prove a workable solution of the difficulty, but its practical operation would involve obviously a high order of administrative ability on the part of the directors of the nation's industries.

Difficulty of Valuing Goods

A second difficulty concerns the determination of the values of different economic goods. Since these are produced on government account quite independently of markets and the higgling of markets, such determination would have to be made through the application of some administrative rule. One rule proposed is that each good be valued in proportion to the labour time involved in its production. But how could such labour time be measured? What quality of labour should be selected as a standard? Should the product of a day's labour of a talented artist be valued the same as the products of the labour of a machine tender? If so, will there not be a continuing discrepancy between the demand for and the supply of the former? Shall no allowance be made for the part which land and capital goods play in production? The bare statement of these questions suggests the complexity of the problem which would confront the government in connection with the mere valuation of the products of its farms and factories.

Difficulty in Connection with Capital

A third difficulty concerns the decision as to the quantities of different goods to be produced from year to year, and especially as to the proportions of the labour time of the community that should be devoted to the production of capital goods and of consumers' goods, respectively. Each com-

munity would have it in its power to neglect entirely the interests of the future by failing to replace or add to its stock of capital goods, or to provide abundantly for future requirements by devoting all the labour time not needed for the production of current necessaries to the production of such goods. What principle could guide government officials in deciding wisely on this all-important question? Would they not, as elected officers, be under a constant temptation to win popular favour by adding to the current supplies of goods at the expense of the fund of capital?

Progress under Socialism

Finally, there would be the difficulty of deciding as to the relative merits of different methods of production. If progress were to continue, improvements on current methods would be constantly necessary. How much labour time should be diverted from the routine of production along old lines to industrial experiments? Who would determine when an experiment in a given direction should be abandoned as barren of result? Who would say when an old process and old machinery should be given up and a new process and new machinery substituted? In actual industrial society these questions are answered crudely, but effectively, through the impartial operation of competition. The best process wins in the long run because it pays best. Would the best process be as likely to be preferred under socialism?

Conclusion

Many other difficulties might be suggested, but enough has been said to indicate the puzzling problems that would confront the directors of a socialist state. One great merit of the present system is that it works. In the absence of proof one may be excused for doubting whether socialism would work in practice. Its operation would certainly call for a grade of administrative ability and a devotion to the public interest superior to any to be met with among elected officials of the present day. Our conclusion from this brief review of the obstacles to the realisation of socialism is that it is impracticable for the men and women who now compose civilised society. If the industrial world is moving in its direction, it is at a slow pace. For many years to come progress must consist in improvements in the present competitive system calculated to raise the plane of competition and equalise opportunities so

that the children of the poor may enjoy educational advantages more nearly equal to those of the rich and the ownership of property may be more generally diffused.

The Socialism of Karl Marx

§ 292. In the foregoing sections the ideals of the group we have styled evolutionary socialists have been chiefly considered. The other group, which we have styled the revolutionary socialists, looks upon the present industrial system as fundamentally unjust. A main tenet in their creed is that the whole product of industry is due to labour, and should therefore go to labour, and that what landlords and capitalists take as rent and interest is practically stolen. The most elaborate defence of this view is contained in the work of the German socialist, Karl Marx, entitled *Capital,* which undertakes to expose the iniquities of the present system and at the same time to show that it contains within itself the seeds of its own destruction. Space will not permit a detailed criticism of this phase of socialism, but a few words should be devoted to it in closing.

Criticism

It is a fundamental error in analysis to ascribe the value of the products of industry to the labour involved in their production. Value, as already explained, is the joint result of utility and limitation of the supply. Under conditions of free competition value arises because of the cost involved in producing goods. This varies under different natural conditions and consequently rent appears. Under the least favourable natural conditions resorted to cost involves not only labour, but also the sacrifice involved in supplying the capital indispensable to efficient production. The value of the product must be great enough to remunerate workmen *and* capitalists, or the inducement which causes those at the margin of doubt between saving and spending to save will be removed and the fund of capital will be reduced. The payment of interest is as just and, economically, as necessary as the payment of wages. It is the premium industrial society offers to those who will furnish it with the capital it needs and it is never higher than is necessary to secure this capital. It is true that much of the needed capital would be furnished if there were no premium, but it is equally true that many workmen, and especially those whose work is of most value to so-

ciety, would work for nothing rather than abandon their chosen professions. In each case the reward is determined by the character and motives of the marginal men in the group affected. In each case, moreover, the necessity of rewarding these marginal men gives a value to the product sufficient to reward at the same rate all men in the group. The interest capitalists receive is in no sense subtracted from the reward that goes to labour. It comes from the extra product due to the assistance which capital goods render to production, just as the wages of labour come virtually from the products of labour. In neither case is there any exploitation of one factor by the other. If this analysis is accurate the whole contention of Marx and his followers falls to the ground, and the present industrial system is cleared of the charge of being based on the legalised robbery of the labouring by the propertied class.

Conclusion

§ 293. In criticising land nationalisation and socialism as plans of economic reform, there has been no wish to make light of the evils in the present industrial order to which they respectively refer. Both owe the strength of the appeal which they make to fair-minded men to the fact that the material aids to production, land and capital goods, are unequally distributed and that, as a result, every community presents the contrast between the bare-handed labourer of ordinary intelligence who, by his best endeavours, can earn only a scant livelihood and provide but indifferent educational advantages for his children, and the idle man of property, who has everything, although he does nothing. This unequal distribution of property may be necessary, but no amount of reasoning can make it seem other than unfair to the portionless children of the poor. In the next chapter we must consider how far an unequal distribution of wealth is a necessary condition to economic progress, at the same time that we discuss the nature of progress and the conditions upon which its continuance depends.

REFERENCES FOR COLLATERAL READING

Gilman, Profit-sharing between Employer and Employee; **Schloss*, Methods of Industrial Remuneration; Report of Proceedings of Industrial Remuneration Conference, London, 1885; **Jones*, Co-operative Production in Great Britain, 2 vols.; *Holyoake*, History of Co-

operation, 2 vols., and The Co-operative Movement of to-day; **Lloyd*, Labour Copartnership; Annals of the English Co-operative Wholesale Society; Proceedings of the Congresses of the International Co-operative Alliance (especially of Fifth Congress, Manchester, 1902); **George*, Progress and Povery; *Dawson*, The Unearned Increment; *Wallace*, Land Nationalisation; **Shearman*, Natural Taxation; **Rae*, Contemporary Socialism (includes chapter on "Single Tax"); **Kirkup*, History of Socialism; *Menger*, The Right of Labour to the Whole Product; * Fabian Essays in Socialism; **Schäffle*, The Quintessence of Socialism; *Marx*, Capital, 3 vols.; **Böhm-Bawerk*, Karl Marx and the Close of his System; **Bellamy*, Looking Backward, and Equality.

CHAPTER XXVII

ECONOMIC PROGRESS

The Nature of Economic Progress

§ 294. Economic progress is improvement in general well-being due either to increased command over economic goods or to reduced costs of production. It may show itself in increased earnings for the labouring masses, in shortened hours of labour, or in an increased adaptation of work to the tastes and capacities of workmen. Definite as these criteria of progress appear to be, it is unfortunately true that there are no means of comparing them accurately from generation to generation. Until recently few records were kept of the commodities which families in different circumstances were in the habit of consuming. Even those which are now preserved will be puzzling in many of their details to future economists because the goods consumed will have changed in kind and quality as well as in quantity. The impossibility of making exact allowance for such changes opposes a permanent barrier to accurate comparisons between the standards of living of different periods. Similar difficulties are encountered in trying to gauge changes in the sacrifices involved in production. If it can be shown that the length of the working day has been shortened, it may yet be claimed by the unbelieving that the intensity of labour has increased correspondingly, and there is no certain way of deciding whether or not this has been the case. Under these circumstances the economist must content himself with comparing those objective indications of well-being, such as the rates of wages earned by workmen of different grades, the length of the working day, etc., which admit of measurement and appeal to the judgment of intelligent observers to determine whether these and other changes have really added to human welfare.

Even so simple a question as that whether average money wages have increased or diminished can be answered only on

Changes in Wages and Hours of Labour

the basis of elaborate statistical investigations. One of the latest of such inquiries, conducted by the English statistician, Mr. Bowley, led to the conclusion that in the United Kingdom if the average wages paid in different employments from 1890 to 1899 be represented as 100, the average wages paid at previous periods should be represented as 90 from 1880 to 1890, 95 from 1870 to 1880, 75 from 1860 to 1870, 65 from 1850 to 1860, 60 from 1830 to 1850, 65 from 1820 to 1830, 65 to 70 from 1810 to 1820, and 55 to 65 from 1800 to 1810. This result, although confirmed as regards some of its items by investigations made by Sir Robert Giffen, Mr. Leone Levi, and other English statisticians, must be accepted as subject to a large and indeterminate margin of error. Perhaps all that should be affirmed on the basis of it is that the trend of wages during the century was distinctly upwards and that the rise for the whole period was not less than 50 per cent. As regards hours of labour there is equally clear evidence of improvement. Hours generally appear to have been shortened about two a day (*e. g.*, from 10 to 14 in different employments to from 8 to 12). Statistical evidence in reference to changes in wages and hours of employment in the United States is less ample than for the United Kingdom. Without entering into details it may be affirmed that in this country also the trend appears to have been upwards as regards wages and downwards as regards hours during the last century, but that the improvement was less marked than in the United Kingdom, partly, doubtless, because the United States started at a higher level and one of the tendencies of the century was towards equalising conditions in the two countries.

Progress in Consumption

§ 295. Another method of gauging the extent and direction of economic progress is to review the changes that have occurred in the fields of consumption, production, and distribution to determine whether they have been, on the whole, favourable. In Chapter IV. we considered the contributions which changes in wants and habits of consumption may make to general well-being. Progress in this field depends upon increasing attention to the laws of variety, of harmony, and of least social cost, upon greater economy in consumption, and upon the substitution for narrow and selfish luxury of more

social uses of wealth. As regards each one of these aspects of consumption progress may be discerned.

Increased Variety

Improvements in transportation facilities have helped to break down local habits and prejudices in consumption, while at the same time they have served to bring an ever greater variety of products to local markets. As a consequence the wage-earner of to-day may enjoy as great a variety of goods as did people of wealth a century ago. That this increased variety of consumption has added to general well-being can scarcely be questioned.

Increased Harmony

Progress in the direction of greater harmony in consumption is less clearly in evidence, partly because the increasing variety of goods open to consumers has itself tended to cause confusion. Within recent years, however, a great deal of attention has been given to the cultivation of taste among the masses and there is reason to think that these efforts are beginning to bear fruit. In this department there is still, nevertheless, room for great improvement. If appreciation of beauty of form and colour could be made general, the production of beautiful objects for ordinary domestic use might in the future be effected as cheaply as is that of ugly objects now. The result would be a material addition to the sense of well-being and contentment of all classes.

Reduced Costs

Another result of higher standards of taste on the part of consumers would be increased scope for congenial employments for producers. Thus the law of least social cost would come into play, to add to the advantages resulting from the change. Perhaps the clearest indication that progress towards lessening the costs of production is being made in the United States is the gradual abatement of the quite irrational passion for wealth accumulation that has been noted by foreign observers as an American characteristic, and a more general appreciation of the fact that what a man does for his living has at least as great an influence on his happiness as the amount he earns.

Increased Economy

The indications of progress towards greater economy in consumption are unmistakable. Science has begun to concern itself seriously with the problem of determining what kinds of goods contribute most largely, in proportion to their

cost, to the satisfaction of man's physical wants, and the results already achieved are noteworthy. At the same time successful efforts have been made to reduce the losses due to fire and flood and to repress those forms of consumption that are socially injurious rather than beneficial. Even clearer has been the progress made towards substituting social for merely selfish ways of using wealth. The rich are undoubtedly growing richer with the progress of time, but they are also becoming more mindful of their social obligations. Public opinion no longer finds an excuse for wanton extravagance in the "make-work" argument and is increasingly appreciative of rich men who live simple and unostentatious lives in order that they may have the more to spend for public purposes. No exact statistics showing the increase in the United States of gifts for charitable and educational objects are available, but there is good reason to believe that they have grown at a much more rapid rate than private fortunes.

Consumers' Leagues

Another indication of progress in the field of consumption in the United States is the organisation of Consumers' Leagues in the large cities of the country. By means of white lists, Consumers' League labels, and other devices, these societies enable their members and other interested persons to discriminate in their purchases between the products of fair and humane employers and those of their less scrupulous competitors. The existence of these societies is itself a hopeful sign, since it evinces a growing consciousness on the part of consumers of their responsibility for the conditions of production. By directing consumption along socially defensible lines, they have contributed their share towards the progress in consumption that has undoubtedly been achieved.

Progress in Production

§ 296. The advance that has been made in the field of production is so familiar as to require only the briefest consideration. Invention and discovery have scored triumph after triumph since the first application of steam power to industry, and in every branch of business the productiveness of labour has been largely increased. Other causes contributing to this result have been the opening up to exploitation of new lands and new sources of mineral wealth, the growth of capital, improvements in forms of industrial organisation, and

the development of more capable and intelligent men and women.

When the enormous multiplication of goods that has been made possible by these changes is considered, it may well seem surprising that the condition of wage-earners has not been improved even more than has been the case. To account for this fact we must consider the progress that has been made in the field of distribution.

Progress in Distribution

§ 297. Progress in distribution results from changes which increase the command over goods enjoyed by the masses. To measure it the earning power of the bare-handed, unskilled workman of one period must be compared with that of the same workman of another, allowance being made for any change in the proportion which unskilled workmen bear to the whole population. The statistics already cited indicate that wages have risen substantially, and yet the margin between the necessary expenses of the ordinary labouring family and its earnings is still painfully narrow, even in the United States, the country of high wages.

Reasons for Persistence of Low Wages

The reasons why the average workman still receives such a small return have already been suggested. In the first place, notwithstanding the substantial increase in the productiveness of industry, an equal *per capita* distribution would still fail to provide very amply for the satisfaction of each person's wants. The number of persons of property and high-earning capacity is still small in comparison with the number of the wage-earning population, and the surplus incomes of the former, equally distributed, would not add very greatly to the present earnings of the latter. A second point is that the increased productiveness of industry has been due in large measure to improvements in the capital goods which assist production. The immediate tendency of such improvements is to add to the earning power of capital, rather than to that of labour. This has been neutralised by a remarkable growth in the amount of capital, and the rate of interest must have fallen to a very low level had not population also increased at a remarkable rate. The net result of these changes has been a lower rate of interest on an immensely larger capital fund and a somewhat higher rate of wages for a greatly increased

labouring population. A third point concerns the trend of rent. The opening of new lands to exploitation must have raised materially the margin of cultivation and thus reduced the rent fund, had it not been paralleled by the remarkable growth in population just referred to. The older countries of Europe have poured out millions upon millions of colonists to the new lands, but without, except in the single case of Ireland, reducing their own populations in the process. In consequence, the raising of the margin of cultivation in European countries has been slight, while the rapid settlement of new countries has caused the better lands and natural resources there to command high rents. Thus the rent fund, like the interest fund, has increased enormously in the aggregate, notwithstanding the fact that the margin from which rents are calculated has risen somewhat. A fourth and last point concerns the deductions from the social income made because of the monopoly powers of certain entrepreneurs. There can be no question that a considerable share of the new wealth due to economic progress is enjoyed by those controlling the various forms of monopoly analysed in earlier chapters. If these monopoly incomes could be diffused either by more general competition or by the legal regulation of prices, the earnings of workmen might be higher.

Influence of the Growth of Population

A superficial consideration of the above tendencies might lead to the conclusion that the growth of population was the chief cause of the persistence of the low earning power of workmen. Undoubtedly, had population increased less while capital increased at the same rate and new lands and natural resources were opened on the same scale, the economic position of the average man would have been much improved, but we are not justified in assuming any such possibility. As a matter of fact, the high rate of interest, which has been a chief influence in encouraging and making possible the remarkable increase in capital, has itself been maintained in the face of such increase, at least in part, because of the parallel growth of population. The growth of population has been, also, a principal incentive to the discovery and exploitation of new lands and natural resources. It has thus stood in a causal relation both to the increase of capital

and the settlement of new countries, and speculation as to whether a less rapid multiplication would have been on the whole advantageous to the average man, is idle.

Quite a different question is that as to whether such large deductions from the products of industry for the payment of competitive and monopoly profits, of rent, and of interest are necessary. It is at this point that radical reformers take issue with conservative economists. In the last chapter we considered plans for securing for the common benefit rent and interest, and decided that they were impracticable. We must now examine these shares in a more positive way, to determine in what relation their payment stands to the motives and forces that cause economic progress.

Economic Justification of Competitive Profits

§ 298. Generally speaking, competitive profits are fairly earned by those who receive them. They are the incentive which industrial society offers to entrepreneurs who will improve upon current methods of production. To secure them entrepreneurs compete actively to lower their expenses of production so that they may undersell each other, and the whole community is benefited by the resulting reductions in the costs of production. At times, however, competitive profits are obtained in ways that injure rather than benefit society. Unscrupulous employers may take advantage of the ignorance or necessities of their workmen to depress their wages below the level which permits them to maintain their industrial efficiency. Cheap commodities obtained by this means are all too dear if the best interests of producers and consumers alike be considered. Other entrepreneurs may undersell their competitors by adulterating their products. Still others may sell their goods for less than their production has actually cost, and by declaring themselves insolvent shift the resulting loss to their creditors. These and other forms of competition give rise to competitive profits for which industrial society receives no adequate return, and no effort should be spared to render them impossible.

Monopoly Profits

Even more important as sources of large incomes to particular entrepreneurs are monopoly profits. These, too, are usually secured, at least at the outset, in consequence of improvements that have been made in the methods of production,

but they must always be viewed with some suspicion, because they are likely to continue long after the improvements have been made and adequately paid for. If the monopolies which give rise to them are natural, that is, if they result from the fact that concentrated management and operation are economical, sufficient monopoly profit to induce entrepreneurs to organise such industries on a large scale must be left to them if the benefits of monopoly are to be enjoyed. The government may properly interfere, however, in ways that have been discussed in earlier chapters, to prevent excessive monopoly profits. If the monopolies are the result of legal privileges, control over their profits should be exercised as a matter of course by the government which grants such privileges. If they are due to obstacles to the free play of competition, or to unfair forms of competition, the duty of the state to remove such obstacles and put a stop to such unfair practices is clear. Unless the government is zealous in the exercise of its control over monopolies, great inequalities in income are sure to result without any commensurate benefit to the whole community.

Rent and Interest

§ 299. The payment of rent and interest for the use of pieces of land and capital goods is a natural consequence of the institution of private property in the factors of production. That this institution has played an important part in stimulating economic progress in the past can hardly be questioned. It has served as a constant incentive to the industry and thrift without which no advance could have been made. The principal economic motive of the average man is to provide for the comfort and happiness of his family. To accomplish this object he is willing to work laboriously and to set aside a part of his surplus income as a provision for the time when he can work no more, or as a means to giving his children a better start in life than he has himself enjoyed. But a necessary condition to the accumulation of wealth for future use is that the law shall protect individuals in the ownership and control over their property. Where such protection is lacking little wealth will be accumulated, and of that little a large part will necessarily be expended in safeguarding what is left. On the other hand, the more certain the legal protection afforded to property-owners the larger will their accumulations become

and the more ample will be society's resulting equipment in capital goods.

Justification of Rent

The payment of rent and interest has been explained as a transfer to property-owners of the shares of wealth which have been produced through the use of their property. It cannot be looked upon as a hardship to workmen, since it involves no reduction in the share of wealth economically ascribable to their labour. But it has been objected that the payment of rent to private landowners is unfair and uneconomical because the qualities in the land for which it is paid are either natural or due to social changes for which landowners deserve no credit. The reply to this contention is that while rent does frequently, if not usually, arise from these causes, it is still true that private property in land is the surest means of encouraging the best use of land. To the extent that rents may be diverted to the service of the whole community, without injustice to present landowners and without interference with the best uses of land, such division should be effected by means of taxes. This can only be accomplished, however, by slow steps.

Justification of Interest

The payment of interest is the incentive which industrial society offers to those who will save and invest their incomes, just as wages are the premiums offered to those who will work. So long as men continue to be dominated by the motives which now control them, the one is as defensible, economically, as the other. It is not such payment, as has already been pointed out, that is ground for dissatisfaction with the institution of private property, so much as the unequal distribution of wealth that accompanies it.

Unequal Distribution of Wealth Results from Inequalities among Individuals

§ 300. An unequal distribution of wealth must result from the institution of private property so long as individuals and families differ greatly in earning capacity and in prudence and forethought. Where these conditions prevail some individuals and families enjoy large incomes, and out of these incomes set aside for investment large savings, while others accumulate little or nothing. In some families wealth and the qualities necessary to its preservation become hereditary, and great fortunes are passed on from parents to children through several generations. More frequently the wealth

accumulated in one generation is gradually dissipated either through division among numerous heirs or because those who inherit it lack either the capacity or the inclination to keep it unimpaired. So long as a fair degree of equality of economic opportunity is preserved the influences which make for the disintegration of large accumulations of wealth are likely to predominate, and the very rich men of each generation are likely to be those who have acquired the greater part of their fortunes during their own lifetimes. This has been the case in the United States up to the present time, and there is nothing in the practice of paying interest and rent for the use of property fairly acquired that threatens to make it less the case in the future.

Inheritance Taxes

Although hereditary fortunes are usually dissipated after a few generations, it is still true that much of the wealth in existence at any one time has been inherited by those who own and enjoy it. The possession of such wealth cannot, for obvious reasons, be justified on the ground of any special merit on the part of its owners, and it is for this reason that inheritance taxes are so generally approved by thoughtful persons. In resorting to this form of taxation, it must not be forgotten, however, that the prospect of bequeathing property to one's children or other heirs is one of the principal motives to saving and accumulation. Moderate inheritance taxes probably influence but little the rate at which the fund of capital is increased, but no very drastic use of this form of taxation could be made without weakening one of the incentives to industry and thrift and in this way injuring the whole community more than it would be benefited by a more equal distribution of wealth.

Progress in the Future

§ 301. The review of the circumstances which have contributed to the economic progress of the past that has been given indicates the conditions upon which the economic progress of the future must depend. Changes in wants and in habits of consumption calculated to increase the satisfaction which men derive from goods, and to lessen the cost involved in their production, must continue to be made; methods of production must be further perfected by improvements in the capital goods used, by a fuller utilisation of the forces of nature, by

an increase in the fund of capital, by a better organisation of industry, and by a steady improvement in the efficiency of the working population; the distribution of the social income must be modified so that the command over economic goods enjoyed by the rank and file in the industrial army will be ever larger.

The Function of Labour Unions

Some of the reforms that will assist towards these ends may profitably be recalled. Isolated workmen often fail to secure the earnings to which they are economically entitled because they do not bargain on terms of equality with their employers. Trade unions are the agencies that must be relied upon to correct these inequalities. So long as they do not try to become close monopolistic associations, but confine their activities to securing the best terms possible for their freely admitted members, they merit all the encouragement and assistance that can be given them. Notwithstanding striking exceptions, their general tendency is towards improving the condition of wage-earners and rendering more harmonious and cordial the relations between the latter and employers.

Of Labour Laws

For wage-earners among whom trade unions can be organised, state interference to prevent the making of socially disadvantageous labour contracts may not be necessary. In the case of great industrial classes, however, nothing but an aggressive policy of interference to establish the plane of competition can serve to protect workmen from unduly long hours under insanitary conditions. The codes of labour law already adopted must be extended and perfected, and in time may have to embrace even prescriptions in regard to the minimum rates of pay that will be tolerated in certain employments. Side by side with this policy of regulation must be developed agencies for caring adequately for the unemployable and for protecting from their deadly competition the individuals and families that are capable, under proper conditions, of independent self-support.

The Regulation of Monopolies

In certain industries free competition has proved itself incapable of regulating economic relations as the general interest requires. Some industries are monopolies by their very nature, others have become monopolies because of defects in the legal system. In relation to such industries the function

of the state is clear. Natural monopolies should be controlled as regards the charges they are allowed to make for the services they render, and sometimes as regards also the quality of these services. When this control can only be exercised effectively through the expedient of government ownership and operation, the latter should be fearlessly undertaken. Only by such means can the interests of the public be safeguarded and injustice prevented. Monopolies that have arisen because of defective laws or public policies should be attacked through such laws. It is the duty of the state, so long as it continues to permit free competition, to enforce fair competition, and appropriate measures to this end must be devised and put into execution.

Of Housing Conditions

The same reasons that make factory regulations necessary to the health and safety of factory employees make necessary the effective regulation of housing conditions in great cities. The ignorant and careless who submit to insanitary workrooms will submit as readily to insanitary homes unless the state or city interferes to enforce minimum standards of cleanliness and decency.

Free Public Schools

Even more important than increased attention to public health is increased attention to public education. For reasons that have been given, parents cannot be depended upon to demand as high standards of education for their children as it is to the general interest that children should enjoy. The state must interfere to provide adequate schools and to compel attendance at such schools, or others of similar grade, and its expenditures for this purpose, so long as they are calculated to improve the educational advantages offered, can hardly err on the side of excess.

Tax Reform

Space has not permitted consideration of the subject of taxation, but reasons have been given for the belief that the protective tariff of the United States has outlived its usefulness, and a plan of combining with state inheritance taxes a method of increasing the taxes imposed upon land in cities has been suggested. Reform in the methods of taxation is the more important because the economic progress of the future is certain to involve a large increase in public expenditures. Public revenues must be drawn from the incomes of those who can

best afford to contribute to the common fund, if the benefits of such increase are not to be largely offset by the curtailed incomes of those whose earnings are already all too small.

Progress Depends on the Individual

The above are some of the minor reforms which the author would urge as substitutes for the radical changes proposed by advocates of land nationalisation and socialism. They belong distinctly to the present and the immediate future, while the latter must be deferred to a future so remote that present discussion of them is of doubtful value. If economic progress is to follow from these changes, they must result in steady improvement in the standards of living and of efficiency of the wage-earners in each community. For, at last analysis, every effort to improve conditions which is not registered in the character and capacity of the average individual must prove futile. Unless he responds to the enlarged opportunities that are presented to him, there is no hope of permanent betterment. That he will respond, and that rising standards of living will exercise the needed control over the growth of population, so that improvement in the quality of life will be as conspicuous a characteristic of the present as was an increase in numbers of the past century, is the author's confident expectation.

Probable Course of Wages, Interest, and Rent in the Future

§ 302. The trend of wage and interest rates and of rent in future years cannot safely be predicted from their trend in the past. All that can be said is that if present tendencies continue to operate, certain results will follow. If the progress in production that may be confidently predicted continues to be accompanied by a gradual rise in the standards of living of the working classes, there must be a steady increase in wages. One effect of such an increase will be a larger and larger accumulation of capital on the part of wage-earners themselves, and this, added to the capital accumulated by other classes, will have a tendency to reduce the rate of interest. There is little reason, however, for expecting anything more than a very gradual fall in interest, or that the rate will be lowered to nothing within many decades or even centuries. Opposed to such a result are the discoveries of ever new uses for capital goods that are certain to be made, and the lessened rate of accumulation on the part of capitalists that may be expected as their

incomes from capital, in consequence of the decline in interest itself, become smaller and smaller. The future course of rent will depend upon the relation between the growth of population and the progress that is made in utilising to better advantage the world's natural resources. The aggregate rent fund is certain to increase as it has in the past, as the area of the earth's surface turned to economic account increases. This may not, however, involve any lowering in the margin of cultivation any more than has the progress of the last one hundred years.

To predict whether the above changes, which may be said to be in progress at the present time, will continue uninterruptedly is no part of the task of science. As in the past, so in the future, new conditions and new forces are likely to present themselves, which will cause the anticipations of present-day economists to seem as baseless as many of those of Adam Smith and his immediate followers have already been proved to have been.

Economic Progress and the Moral Elevation of the Race

§ 303. The impression almost necessarily left upon the mind by a treatise on economics is of a somewhat hard and material view of life. In concentrating attention upon goods and the satisfactions which result from them, the economist seems to ignore love, religion, and other things that are truly great and admirable in the world. Excuses that may be urged in his behalf readily suggest themselves. He may not justly be accused of ignoring love and religion because he has little to say of them. Like other specialists, he must confine himself rigidly to his particular subject if he is to contribute anything of value to the sum of human knowledge. But the charge is not so easily answered. Economists profess to concern themselves with the conditions upon which human well-being depends. They talk of satisfactions, of pleasures and pains, of progress. Can they have anything final to say on these subjects when they pass over the very experiences which, in the opinion of so many persons, make life most worth living? It must freely be confessed that they cannot. Basing their conclusions on a study of the economic side of life, they can claim finality for them only as respects economic relations. The satisfactions they discuss are satisfactions connected with goods,

or the activities necessary to the production of goods. Whether an increase in these satisfactions really contributes to the moral elevation of the race is a problem that can be decided only by reference to broader considerations than fall properly within the field of economics. An economist may, nevertheless, be pardoned a closing word touching this vital matter.

The True Goal of Economic Progress

Economic progress is something more than a progressive advance towards a state of society in which all individuals will be superabundantly supplied with goods. It includes in its view activities as well as the satisfactions connected with consumption. Economically speaking, it is quite as important to get rid of the pains of production as to add to the pleasures of consumption. The economist's ideal is thus a world in which wants and the activities of production are so harmoniously adjusted to each other that the field of industry offers full scope to all for the exercise of those faculties and capacities from which they get the greatest benefit and happiness, at the same time that it rewards all with the goods which they most require. Up to the present time progress has been mainly in the direction of adding to goods. It is necessary to raise consumption to a certain standard before it can be appreciated that additional comforts and luxuries are dearly bought at the price of uncongenial toil, and before due attention can be attracted to the other line of development. When this standard is reached, however, the choice of occupations will begin to be made with greater reference to the tastes of individuals as producers, and with less regard to their need for goods as consumers. Progress from this point forward will be towards more and more congenial work for all rather than towards a further multiplication of goods. If contemporary economic discussions seem to over-emphasise the importance of goods or wealth and to give too little heed to worthy and ennobling activities, it is not because this is an essential characteristic of economics, but because it is still true that the mass of men are all too poorly supplied with goods, and that for them the problem of most pressing concern is how this deficiency may be relieved. For the middle and upper classes in the economic scale deficiency of goods has already ceased to be a ground for anxiety. The real economic evil for them is deficiency in con-

genial pursuits, and the economist may unite with the moralist in urging, in their case, less concern about material comforts and more concern about the way in which the working life is to be spent.

Conclusion

Economic progress is by no means the end of life, but, conceived in a broad way, it is fundamental to all progress. A certain control over material goods is essential to appreciation of all higher goods. Given control over the necessaries and comforts indispensable to well-rounded existence, the next step is to find work which will afford scope for one's highest faculties. This quest, which is purely economic, affords opportunity for the best and highest development of which human beings are capable. For persons with artistic imagination and the creative faculty it will mean the choice of artistic professions or crafts; for those with scientific curiosity and the love of study it will mean the selection of scientific pursuits; finally, for the great mass of men, who are now, and probably will continue to be, neither artists nor scientists by nature, it will mean the choice of those occupations which will enable them to minister most largely to the wants of others and in this way to satisfy most fully their social aspirations. For, if men are now self-seeking in a narrow sense, it is because the hard struggle for existence to which they have owed their development in the past has made them so. As goods become more plentiful, the larger social self, which already directs the lives of so many so-called unselfish persons, will become dominant. Its satisfaction will demand a constant ministering to the wants of others, just as the satisfaction of the narrower self of the average man now demands constant attention to personal wants and the wants of the family. Thus, if the study of economics seems to involve a hard and material view of life, it is because we still live in a hard and material age. The economist's ideal is not only not inconsistent with the moral elevation of the race, but it includes that elevation as one of its necessary elements. It is his confident expectation that men will grow better as the conditions of their economic life become pleasanter; and his belief that they can grow better in no other way is what gives its chief interest to his subject.

INDEX

INDEX

Abraham, M. E., 433
Adams, H. C., 62
Agriculture, in U. S., 33 f; U. S. Department of, 80
America, importance of discovery of, 9
American Desert, the, 25
American Sugar Refining Company, the, organisation of, 478; dividends of, 485
Anthracite Coal Strike (see Strike)
Anti-trust Act, the Sherman, 500; the, of Ohio, 501 f; futility of, policy, 502
Apprentices, Statute of, 10
Arbitration, voluntary, 399; State boards of, 399 f; justification of compulsory, 400; compulsory, in New Zealand, 401 f; in New South Wales, 402 f
Arkwright, Richard, 13
Ashley, W. J., 19
Assize of Bread and Ale, 9; of cloth, 9
Atwater, W. O., 71, 80
Aulnagers, 9

Backhouse, Judge, 411
Balance of trade, 11; in U. S., 42 f
Banking System, of U. S., 338 ff; defects in, of U. S., 340 ff
Bank-notes, function of, 331 f
Banks, functions of, 324 f; deposit business of, 328; loans of, 328 ff; limits to business of, 334 f; arguments for regulation of, 336 ff; services rendered by, 343 f
Bargaining, collective, arguments for and against, 393 ff
Barter, disadvantages of, 302
Bastable, C. F., 62, 384
Bellamy, E., socialism of, 530, 536
Bemis, E. W., 459
Bimetallism, international, 355; in U. S., 357 f
Birth-rates, in Europe, 284 f
Black Death, the, 7
Böhm-Bawerk, E. von, 61, 106, 136, 282, 301, 536
Bolles, A. S., 344
Bonar, J., 61 f
Boon-day work, 3
Bounties, on corn, 11
Bowker, R. R., 62
Boycott, definition of the, 397; examples of use of the, 397 f
Brooks, J. G., 411
Bücher, K., 61
Budgets, family, statistics of, 77 ff; collection of, 80
Bullock, C. J., 62, 204
Business, different branches of, 155
Buyers, calculations of, 98 f

Cairnes, J. E., 234
Cannan, E., 61 f
Capital, definition of, 108; origin of, 125; advantages of, 125 f; and capital goods, 126 f; kinds of, 127; accumulation of, 130 ff; the mobility of, 244 ff; growth of, in United Kingdom, 294; in U. S., 294 f
Cartwright, Edmund, 14
Checks, the fuction of, 326 f: use of, in U. S., 327

Cheyney, E. P., 19
Clark, J. B., 60, 62, 106, 136, 168, 243, 264, 301, 509
Clearing-houses, the function of, 326 f
Coal, importance of, to England, 13; in U. S., 36 f
Coinage, debasements of, 10; regulation of, 307; history of, in U. S., 309 f; 312 f; probable consequences of free, of silver, 357 f
Colonies, American, conditions in, 20
Combination, Anthracite Coal, in U. S., 444 ff
Common, town, 6
Communism, definition of, 528
Competition, influence of, on prices, 101 ff; between workmen and capital goods, 258 f
Conant, C. A., 344
Conrad, J., 61
Consumers' Leagues, work of, in U. S., 540
Consumption, definition of, 51; adaptation of, to environment, 69; to tastes of producers, 69 f; to laws of production, 70 f; economical, 71 f; statistics of, 76 ff; relation of, to production, 79 f; progress in, 538 ff
Co-operation, kinds of, 137; distinguished from copartnership, 143; qualities necessary to, 139; advantages of, 139 f; disadvantages of, 140 f; progress in, 142 (see Copartnership)
Copartnership, labour, history of in Great Britain, 513 ff; slight development of, in U. S., 515; obstacles to extension of, 516 ff
Copper, production of, in U. S., 37
Copyright, law of, in U. S., 442 f
Corn, importance of to U. S., 33 f
Corporations, description of, 145; advantages of, 145 f; disadvantages of, 146 ff; disregard of public interest by, 147; the, problem, 148 f
Cort, Henry, 14
Cossa, L., 62
Cost, law of least social, 68 ff; marginal, definition of, 84; relation to value of, 84 f; 91 ff
Cost of production, definition of, 53 f
Cotton, in U. S., 35; manufactures of, 41 f
Cotton Gin, invention of, 32
Court, decision of U. S. Supreme, in Utah eight-hour law case, 418 f
Courts, American, conflicting decisions of, in labour cases, 416 ff
Craft guilds, 6
Credit, the nature of, 323; book, 323 f; bank, 325 ff; forms of, 327; interest for use of, 333 f; and money, 347
Crompton, Samuel, 14
Crusoe, Robinson, valuations by, 81 ff
Cultivation, intensive and extensive, 115 f
Cunningham, W., 19

Darwin, L., 360, 459
Davidson, J., 243
Davies, A. L., 433
Dawson, W. H., 536
Death-rates, in Europe, 284 f
Demand, law of, 66 f; elasticity of, 66
Dewey, D. R., 322
Diminishing returns (see Law of)
Discrimination, by railroads, 466 ff
Distribution, definition of, 56; relation of, to production, 162; in state of normal equilibrium, 164 ff; law of, 260 f; graphic illustration of, 268 f; restatement of law of, 273 f; value and, 275 f; exchange theory of, 276 ff; ulti-

mate determinants of, 299 ff; progress in, 541 ff; reasons for unequal, of wealth, 545 f
Disutility, relation to value of marginal, 84 f; total, 87
Division of labour (see Labour)
Dixon, F. H., 475
Drage, G., 411
Ducpétiaux, 77
Dunbar, C. F., 62, 322, 344
Duties, *ad valorem* and specific, definitions of, 374 n

Economic man, characteristics of, 47 f
Economics, definition of, 1
Economy, of different foods, 72
Edgeworth, F. Y., 62
Education, importance of, 120 f; influence of, on wages, 234 ff; as an investment, 241 f
Edward VI., 10
Eight-hour day, Utah's, law, 418 f; question of a universal legal, 422
Electricity, uses of, 39
Elizabeth, 9; legislation of, 10; grants of monopolies by, 11
Ely, R. T., 60, 62, 80, 204, 411, 459
Emancipation proclamation, in U. S., 22
Embargo Act, 23
Enclosures, in England, 7
Engel, F., 77
England, Bank of, 325
Enterprises, business, classified, 152
Entrepreneur, the, description of, 55, 143 f; single, system, 144 f; conditions fixed for, 171; power of substitution of, 171 ff
Equality, American ideal of, 21
Equilibrium, state of normal, 52, 164 ff; production and distribution in a, 166; correspondence with reality of the, 167 f
Erie Canal, 25 f
Evolution, relation of, to production, 124 f
Exchange, foreign, definition of, 361; sterling, determination of rate of, 362 ff; ways of quoting foreign, 365
Expenditures, refutation of argument in defence of luxurious, 74 f
Expenses of production, definition of, 54; differences in, due to land, 111 f; elements in the, 157 ff; relation of, to prices, 161 f
Exports, changes in, of U. S., 43

Factory system, rise of the, 16; effects of the, 17 f
Failures, in United States, 1893 to 1901, 179
Falkner, R. P., 360
Families, expenditures of, 77 ff
Firm, the representative, 152 f
Foreign Trade of U. S., 42 f
Fulton, Robert, 14
Fund, replacement (see Replacement fund); wages (see Wages fund)
"Futures," dealings in, 174 ff

Gambling, distinguished from speculation, 176
Garfield, President, 375
Gas business, a monopoly, 448
George, H., argument of, for the single tax, 520 f; 536
Gibbins, H. de B., 19
Gide, C., 60
Giffen, Sir R., 301
Gilman, N. P., 535
Gold, in U. S., 37; world's stock of, 306; the value of, 345 ff; demand for, 346 f; supply of, 351 f; points, 362 f; supply of, self-regulating, 366 f
Goods, economic and free, definitions of, 48 f; present *vs.* future, 64 f; capital, kinds of, 127; class-

ification of, 132 f; life periods of capital, 272; future, and interest, 277 f; preference for present, explained, 296 ff
Grades, of workmen in U. S., 234 ff
Great Britain, labour legislation of, 413 ff
Greeley, H., views on protection of 375
Greenbacks, history of, 315
Gresham's Law, explanation of, 309 ff
Groups, non-competing, of workmen, 240 f
Guilds, merchant, 5; craft, 6
Guild system, description of, 5 ff; decay of, 6 ff
Gunton, G., 509

Hadley, A. T., 62, 264, 322, 344, 475
Halle, E. J. von, 509
Hamilton, Alexander, 23
Hargreaves, James, 13
Harmony, law of, 68
Harrison, A., 433
Hay, production of, in U. S., 34
Hearn, W. E., 80
Henry III., 9
Henry VII., 9
Henry VIII., 9; debasements of the coinage of, 10
Heredity, influence of, on wages, 233
History, its relation to economics, 2
Hobson, J. A., 62
Holyoake, G. J., 535
Howell, G., 411
Hutchins, B. L., 433

Iles, G., 62
Immigration into U. S., 29 ff
Income, uses of, compared, 74 ff; real, paid out of capital, 157; money, 163; relation between money and real, 163 f; funded, definition of, 200 f; rent a type of funded, 218
India, monetary system of, 311
Industrial Commission, Report of the U. S., 475, 509
Industrial Revolution, description of the, 12 ff
Ingram, J. K., 61
Inheritance tax, arguments for an, 525 f; plan of combining an, with a land tax, 526 f
Injunction, use of the, in connection with strikes, 403 f; arguments against, 404
Interest, definition of, 244; rent and wages contrasted with, 244; influence of competition on, 246 ff; causes of differences in rates of, 248 ff; on money, 252 f; relation between marginal, and wages, 255 f; illustration of relation between, and wages, 261 ff; dependence of, on other shares, 263 f; restatement of law of, 271 f; law applies to gross, 273; justification of, 545; probable course of, in the future, 549 f
Interstate Commerce Act, the, 462 ff; provisions of the; 469 f; defects in the, 470; amendment to the, of 1903, 471; need of further amendments to the, 474 f
Interstate Commerce Commission, Reports of the, 467, 474, 475
Investor, the "innocent," in connection with monopoly problem, 201 f
Iron, production of, in U. S., 35 ff; manufactures of, 40 f

Jenks, J. W., 62, 509
Jevons, W. S., 61, 322, 360
Johnson, A. S., 221
Johnson, E. R., 475
Johnson, J. F., 360

Jones, B., 535

Keynes, J. N., 60
Kirkup, T., 536
Knox, J. J., 344

Labour, U. S. Department of, 77, 80; influences affecting productiveness of, 120 ff; division of, described, 137 f; influences affecting division of, 138 ff; obstacles to free market for, 385 ff; American Federation of, 387; regulation of, of women, 412, 420 f; of men, 413, 423; in dangerous trades, 410; history of, in Great Britain, 413 ff; history of, in U. S., 416 ff; of children in U. S., 419 f; arguments for and against, 431 f
Labour copartnership (see Copartnership)
Labour movement, future of the, 410 f
Labourer, qualities necessary to efficiency of the, 120 f; development of the, 121 ff
Labourers, Statutes of, 7; disadvantages of, in bargaining, 385 f
Laissez-faire policy, description of, 15; adoption of, in England, 16
Land, analysis of productive services of, 108 ff; differences in, 110 f; farm, 112; mineral, 116; city and country, 117 f; value of, in London, 118; advantages of private property in, 518 f; the present, problem, 519 f; peculiarities of a tax on, 523 f; plan for taxing, 526 f
Latin Union, monetary policy of the, 310 f
Laughlin, J. L., 322, 360
Law, its relation to economics, 2; of diminishing utility, 63 ff; of demand, 66 f; of variety, 67 f; of harmony, 68; of least social cost, 68 ff; of diminishing returns, statement of, 113 f; application of, to capital, 128; to labour, 129 f; of monopoly price, 194 ff; Gresham's, 309 ff
Laws, description of, of Economics, 58 ff; labour, part of unions in securing, 409 f
Le Rossignol, J. E., 459
Leslie, J. E. C., 61
Levasseur, P. E., 411
Lewes, G. H., 475
Liability, employers', law of, in New York State, 428; substitute for, in Great Britain, 428 ff; in Germany, 430
Liberty, Amrican ideal of, 21
List, F., argument of, for protection, 373
Lloyd, H. D., 509, 536
Loans, call and time, distinguished, 329 f; interest on bank, 332 ff
Lockouts, evils connected with, 396 ff
Locomotive, invention of, 14
Lodge, H. C., 45
Louisiana, purchase of, 24
Luxury, 72 ff; definition of, 73; maxim concerning, 73; fallacies about, 75 f; defensible, 75 f

Macleod, H. D., 344
Malthus, T. R., 61, theory of population of, 285 ff
Man (see Economic man)
Manorial System, description of, 2 ff
Manors, average size of, 3
Manufacturing in U. S., 39 ff
Margin of cultivation, intensive and extensive, contrasted, 115 f

Margin of production, wage and interest rates determined at the, 256 f
Marginal interest, how determined, 255 ff
Marot, H., 433
Marriage-rates, in Europe, 284 f
Marshall, A., 60, 62, 80, 106, 119, 136, 154, 187, 204, 221, 243, 264, 301
Marx, K., the socialism of, 534 f; 536
Mayo-Smith, R., 80, 301
McMaster, J. B., 45
Meade, E. S., 509
Menger, A., 536
Menger, C., 61
Mercantile System, description of the, 11 f
Merchant Guilds, 5 f
Métayer system, description of, 219 f
Methods, of economics, description of, 56 f
Mill, J. S., 61, 221; statement of wages-fund theory by, 280, 282
Mining in U. S., 35 ff
Mississippi, Valley of the, 25
Mitchell, J., 411
Mobility of capital, 244 ff
Monetary system, of India, 311; of U. S., 313 ff; 321
Money, in Middle Ages, 4; its importance, 6 f; value of, 97 f; interest for, 252 f; functions of, 302 ff; value of, and prices, 304; stability in value of, desirable, 304; commodities used for, 304 f; qualities of a good, 305 f; precious metals as, 306; state regulation of, 307; standard, credit, and token, distinguished, 308; function of token, 318 f; function of credit, 319 f; objections to credit, 320 f; and credit, 347 f; method for measuring the value of, 352
Monopolies, in sixteenth century, 11; labour, objections to, 408; legal, in U. S., 434 f; private legal, in Great Britain, 436 f; importance of natural, 443; of situation, 443 ff; of organisation, 446 ff; problem of municipal, 454 ff; methods of regulating municipal, 457 f; national, 460
Monopoly, definition of, 188; distinguished from differential advantage, 188; kinds of, 189; importance of, in U. S., 189 f; checks on, 191 ff; and the public, 202; influence on production of, 203 f; influence of, on shares of income in competitive industries, 267 f; importance of, problem, 434; profits from patents, 441
Motives, economic, 46
Murphy, E. G., 433

National banks (see Banking system of U. S.)
National System, the, 9 ff
Natural gas, production of, in U. S., 38
Necessaries, economic, definition of, 73
Negroes in U. S., 30 f
Nettleton, A. B., 509
Nicholson, J. S., 62, 119, 136, 154, 221, 301, 322
North, S. D., 433
Noyes, A. D., 322

Palgrave, I., 60 f
Partnership, description of, 144 f
Patents, number granted in U. S., 1837 to 1900, 190; system of, in Great Britain, 437; in U. S., 438; arguments for and against, 438 f; needed reforms in, in U. S., 440 f; as a source of monopoly profits, 441

Patten, S. N., 62, 80, 384
Peasants' Revolt, the, 7
Petroleum, production of, in U. S., 38
Physiocrats, the, 107
Pierson, N. G., 106, 136, 187, 243, 264, 282, 322, 384
Pin-making, description of, in 1776 and to-day, 142
Plener, E. von, description of mining industry in Great Britain in 1840 by, 414 f; 433
Political Economy (see Economics)
Politics, its relation to economics, 2
Population, proportion of, living in cities in England, 4; of U. S., 29; distribution of, in U. S., 30 f; 32; statistics of, of Europe, 283 f; Malthusian doctrine of, 285 ff; checks on, 288 ff; a stationary, 290 f; effects of growth of, 542
Power, water, used in manufacturing, 113
Power loom, 14
Precious metals, export of, prohibited, 11
Price, definition of, 50 f; one, system, 103; law of monopoly, 194 ff; relation to actual price, 196; restatement of law of, 266
Price, L. L., 19, 61
Prices, determination of, 98 ff; one buyer and one seller, 99; several buyers, 99 f; several sellers, 101; competitive, 101 ff; market, 104; normal, 104; summary of theory of, 105; normal, just cover expenses, 161; fluctuations in, a source of profits, 172 ff; rising and falling, 177 ff; method of measuring level of, 352 f; reasons for fluctuations in, 354 f
Producers, relation of, to consumers, 266
Production, definition of, 51; expenses of (see Expenses); analysis of, 107; Physiocratic theory of, 107; Adam Smith's theory of, 107; primary and secondary factors in, 108; capitalistic, description of, 125 f; its advantages, 126; progress in, 134 f; large *vs.* small scale, contrasted, 149 ff; branches of, 155; relation of, to distribution, 156 f; relation of, to distribution, graphically illustrated, 268 f; progress in, 540 f
Profits, net or competitive, 172 ff; influence of price changes on, 172 ff, 177 ff; influence of inventions on, 179 f; influence of improvements in production on, 181; elimination of, by competition, 181 f; influence of variableness of climate on, 182 f; insurance equalises, 183; influence of changes in wages and interest on, 185 f; monopoly, 188 ff; ways of concealing monopoly, 198 ff; contrasted with other shares in distribution, 205; monopoly, from patents, 441; from street railways in U. S., 453 f; justification of competitive, 543; of monopoly, 544 f
Profit-sharing, forms of, 510 ff; objections to sliding-scale system of, 510; advantages of, 512 f
Progress, due to changes in taste, 70; definition of economic, 537; indications of, 537 f; in consumption, 538 ff; in production, 540 f; in distribution, 541 ff; in the future, 546 f; conditions favourable to, 547 ff; goal of economic, 551 f; con-

clusion in reference to economic, 552
Property, private, in U. S., 21
Protection, origin of, in U. S., 22 f; definition of, 370; history of, in U. S., 371 ff; arguments for, 371 ff; burden of, in U. S., 377; future of, in U. S., 381 f

Rae, J., 61 f; 536
Railroads, in U. S., 27 f; monopolistic features of, 461 ff; combinations of, in U. S., 461 f; capital invested in, in U. S., 468; profits of, in U. S., 468 f; efforts at regulation of, in U. S., 469 f; arguments for and against national ownership of, in U. S., 471 ff
Rand, E. B., 45
Ratio, mint, definition of, 309; commercial, 311 n.
Reeves, W. P., 411
Reform, plans of economic, 510
Rent, definition of, 113, 206; explanation of, 206 ff; graphic illustration of, 207; fertility and situation, causes of, 208 ff; the calculation of, 210 f; theory of, explained graphically, 211 f; of sources of water power, 213; of mines, 213 f; apparent exceptions to law of, 214 ff; and interest on fixed capital, 216; capitalisation of, 217 f; summary of theory of, 218 f; of buildings, 220; importance of, 220 f; restatement of law of, 269 f; justification of, 545; policy of government towards, 545; probable course of, in the future, 549 f
Replacement fund, calculation of the, 272
Reserve, the U. S. gold, 315 f; demand for gold, 349 f
Ricardo, D., 61
Rogers, J. E. T., 19
Roussiers, P. de, 411
Rowntree, B. S., 80
Russell, H. B., 360

Saving, advantages of, 76; illustrations of, 130 ff; motives to, 297 ff
Savings banks, loans of, 330; importance of, in U. S., 343
Say, L., 61
Schäffle, A., 536
Schloss, D., 535
Schmoller, G., 61
Schoenhof, H. J., 243
Scott, W. A., 322, 360
Seligman, E. R. A., 62
Sellers, calculations of, 99
Serfs, 3
Shaler, N. S., 45
Shearman, J. G., 536
Silver, in U. S., 37, 316 ff; question in U. S., 356 ff
Single Tax, the definition of, 520; argument of Henry George for, 520 f; objections to, 521 ff; substitute proposed for, 526 f
Situation, importance of, to land, 116 f
Slavery, economic basis of, 22
Smart, W., 61 f, 106
Smith, Adam, theory of government of, 15, 62; theory of production of, 107; description of pin-making by, 142, 243
Socialism, definition of, 527 f; plans for realisation of, 528 f; advantages claimed for, 529 f; objections to, 530 ff; of Karl Marx, 534 f; conclusions touching, 533, 535
Societies, friendly, *vs.* labour unions, 393
Sociology, its relation to economics, 1
South Improvement Company, freight rates paid by the, 467

Speculation, the economic function of, 175 f
Spiers, F. W., 453, 459
Spinning, inventions affecting, 13
Standard, gold, adoption of, in Europe, 310 f; in other countries, 311 f; maintenance of gold, in U. S., 314 ff; future of gold, 358 f; the multiple, 359 f
Standard of living, differences in, cause of differences in wages, 234 ff; not rigid in U. S., 237 f; influence of, on population, 289 ff
Standard Oil Company, the, organisation of, 478; dividends paid by, 484 f
Stanwood, E., 384
Statistics, definition of, 57
Statutes of Labourers, 7; of Apprentices, 10
Steam-boat, invention of, 14
Steam-engine, invention of, 13
Steel, in U. S., 36; manufactures of, 40 f
Stephenson, Robert, 14
Stickney, A. B., 475
Stimson, F. J., 433
Stock-watering, to conceal profits 200
Street railway business, a monopoly, 448 ff; profits of, in U. S., 453 f
Strike, Anthracite Coal, cost of the, 396 f; Report of Commission on the, 396 ff
Strikes, evils connected with, 396 ff
Substitution, power of, of entrepreneurs, 171 ff; of consumers, 191 f
Sugar trust (see Trust)
Sumner, W. G., 62, 384
Supply, influence of, on prices, 106
Sweating system, description of the, 423 f; evils of the, 424 f; remedies for, in Great Britain and U. S., 428; in Australasia, 425 f

Taff Vale case, decision in, 390
Tarbell, I. M., 509
Tariff, U. S., 23 f; history of U. S., 371 ff; U. S., of 1897, 376 f; question in U. S., 378 ff; and trusts, 380; future of U. S., 381 f; of United Kingdom, 382
Tarr, R. S., 45
Taussig, F. W., 45, 62, 243, 282, 360, 384
Telephone business, a monopoly, 450 ff
Texas, annexation of, 24
Thompson, H. M., 243
Thompson, R. E., 384
Toynbee, A., 61
Trade, balance of, 11; productive, 107 f; foreign and domestic, contrasted, 368; foreign, 368 ff; advantages of free, 370 f; free, definition of, 382
Trade marks, in U. S., 441
Trade unions (see Unions, labour)
Trades, dangerous, the regulation of, in Great Britain, 427
Trust, sugar, competition against, 192 f
Trust Companies, loans of, 330; growth of, in U. S., 343
Trust Conference, Report of Chicago, 509
Trusts, in connection with demand, 67; definition of, 476; motives to formation of, 476 f; early, in U. S., 477 f; present, in U. S., 478; progress of, in U. S., 479 f; method of organising, 480 ff; profits of promoters of, 482 f; ability of, to control prices, 486 f; economies effected by, 488 ff; evils charged against, 491 ff; influence of the tariff on,

494 f; obstacles to legal regulation of, in U. S., 498 f; present status of, in U. S., 502 ff; plan for securing federal control of, 504 ff; the future of, in U. S., 507 f
Turner, F. J., 45

Unionists, labour, right of, to strike, 391
Unions, labour, purposes of, 386 f; importance of, in U. S. 387; in United Kingdom, 388; law concerning, in United Kingdom, 388 ff; in U. S., 390 ff; liability of, for damages in U. S., 391 f; purpose of benefit features of, 392 f; the influence of, on wages, 404 ff; monopoly powers of, 406 f; laws helpful to, 407 f; educational work of, 408 f; as schools of citizenship, 409; and labour laws, 409 f
United States, area of, 24; description of, 24 ff; recent additions to, 26; economic independence of, 44; monetary system of, 313 ff; 321; banking system of, 338 ff
United States Steel Corporation, the, capitalisation of, 479; motives to formation of, 482 f; price of securities of, 484
Utility, definition of, 48; law of diminishing, 63 f; marginal, definition of, 82; relation to value of, 82 ff; total, 85 f; surplus, 87

Value, in use, 49 ff; in exchange, 49 ff; two senses of, 81; in use to Crusoe, 81 ff; in use in industrial society, 88 ff; complex, 89 f; of complementary goods, 94 f; and price, 96; of money, 97 f; summary of theory of, 265
Variety, law of, 67
Villeins, 3

Wages, profits and, 185 f; definition of, 222; problems of, 222 f; explanation of differences in, 223 ff; resemblance of, to rent, 224; relation between marginal and higher, 227 f; other reasons for differences in, 228 ff; efficiency, 230; influences perpetuating differences in, 234 ff; restatement of law of, 270 f; standard, purpose of, 393 ff; influence on, of labour unions, 404 ff; reasons for persistence of low, 541 ff; probable course of, in future, 549 f
Wages fund, theory of, 280 ff
Wages of management, definition of, 158 f; analysis of, 169 ff
Wages question, outline of, 55 f
Wages system in U. S., 22
Walker, F. A., 60, 62, 119, 136, 154, 187, 221, 243, 322, 360
Wallace, W., 536
Walsh, C. M., 360
Wants, characteristics of, 63 ff; indefinitely numerous, 63; varying intensities of, 63; social, 65 f
War, Seven Years', 12; Civil, 22, 27; of 1812, 23
Warner, T., 19
Water, business of supplying, a monopoly, 446 ff
Watt, James, 13
Weaving, invention of power, 14
Webb, B., 411, 433
Webb, S., 411
Week-work, 3
Wheat in U. S., 34; dealings in "futures" in, 174 ff
White, H., 322
Whitney, Eli, 32
Whitney, J. D., 45

Whittlesey, S. D., 433
Wicker, C. M., explanation of discriminating railway rates by, 466
Wieser, F. von, 61 f
Willoughby, W. F., 433
Wilson, W., 45
Wool, importance, to England, 7
Workmen's Compensation Act, in Great Britain, 428 ff
Wright, C. D., 45

Zollverein, the German, 382 f

TWO BOOKS BY THE LATE

FRANCIS A. WALKER

President of the Massachusetts Institute of Technology

DISCUSSIONS IN ECONOMICS AND STATISTICS

Edited by Professor DAVIS R. DEWEY.

With portrait. 454 + 481 pp. 2 vols. 8vo. $6.00 *net.*

Important papers on Finance, Taxation, Money, Bimetallism, Economic Theory, Statistics, National Growth, Social Economics, etc. The author had hoped to himself bring these papers together.

The Dial: "Professor Dewey has performed a real service to the public, as well as to the memory of his late chief. . . . In the present collection the editor has not included everything General Walker ever wrote, but has aimed, so far as possible, to avoid repetitions of thought . . . . there are some discussions of the national finances in the period following the Civil War, which have a timely as well as historical interest at the present time. . . . To improve the census was General Walker's work for many years, and his experience cannot fail to be of interest to the present generation. . . . Economics in the hands of this master was no dismal science, because of his broad sympathies, his healthy, conservative optimism, his belief in the efficacy of effort; and, in a more superficial sense, because of his saving sense of humor and his happy way of putting things . . . . he was the fortunate possessor of a very pleasing literary style . . . . clear and interesting to the general reader, as well as instructive to the careful student. There could have been no more fitting monument to his memory than these two volumes, together with the other volume of 'Discussions in Education.'"

New York Commercial Advertiser: "Clear, direct and forceful, full of familiar illustration and appeal to fact, and always interesting. Certainly no other man has had such a wide influence on the economic thought of America, or has done so much to elevate it. . . . This statement, however, can give no adequate notion of the wealth of material or wide scope of subjects covered by these shorter articles . . . . one can almost hear the spoken word in some of the adresses . . . . an excellent index."

DISCUSSIONS IN EDUCATION

Edited by JAMES PHINNEY MUNROE. 342 pp. 8vo. $3.00 *net.*

The author had hoped himself to collect these papers in a volume.

The Dial: "A fitting memorial to its author. . . . The breadth of his experience, as well as the natural range of his mind, are here reflected. The subjects dealt with are all live and practical. . . . He never deals with them in a narrow or so-called 'practical' way."

Literature: "The distinguishing traits of these papers are open-mindedness, breadth, and sanity. . . . No capable student of education will overlook General Walker's book; no serious collection of books on education will be without it. The distinguished author's honesty, sagacity, and courage shine on every page."

The Boston Transcript: "Two of his conspicuous merits characterize these papers, the peculiar power he possessed of enlisting and retaining the attention for what are commonly supposed to be dry and difficult subjects, and the capacity he had for controversy, sharp and incisive, but so candid and generous that it left no festering wound."

HENRY HOLT & CO. 29 West 23d St., New York
378 Wabash Ave., Chicago

SECOND IMPRESSION.

FORD'S THE FEDERALIST.

Edited by PAUL LEICESTER FORD, editor of the writings of Jefferson; Bibliography of the Constitution of the United States, 1787–1788; Pamphlets on the Constitution of the United States. lxxvii + 793 pp. Large 12mo. $2.50.

The present edition is the first in which any attempt has been made to illustrate, in foot-notes, not merely the obscure passages in the text, but also the subsequent experience of the United States and other countries where they relate to the views expressed by the authors. The most authentic text has been used; the antiquated and often absurd punctuation—largely due to incompetent early printers—has been rationalized; and an introduction, abundant cross-references, and a *full index* materially increase the value of this edition for both students and lawyers. Matter of obsolete or minor interest has been put in distinctive type. An appendix of 149 pages contains The Constitution with all the amendments, and the references to U. S. Reports, besides other documents important in constitutional development.

Roger Foster, author of Commentaries on the Constitution: "The best edition of *The Federalist* that has been published."

Right Hon. James Bryce: "Far the best [edition] I have seen, and the most likely to be useful to students of political science."

New York Tribune: "Mr. Ford's editing is nothing less than perfect. . . . Printed handsomely and published in a convenient size, this is an invaluable edition, calculated to be of service not only to the politician and lawyer, but to every thoughtful citizen."

Review of Reviews: "Mr. Ford has the habit of thoroughness in a very remarkable degree; . . . not only great ability, but rare opportunities and invaluable experience. . . . A soundly edited text; . . . an introductory essay which really puts the touch of finality upon questions that have been in dispute for nearly a century. . . . For the purposes of critical study and precise reference Mr. Ford's edition, it seems to us, must of necessity exclude all others. Quite apart from the extremely valuable editorial work included in the introductory part of the volume, Mr. Ford's index (*The Federalist* has never before been indexed) would entitle him to a vote of thanks by Congress."

Prof. Edward G. Bourne, of Yale: "The most useful edition for the working student."

The Dial: "Mr. Paul Leicester Ford has many titles to the gratitude of students interested in American history, and none more clear than that which is due him for his edition of *The Federalist*. . . . The work is admirably done in all important respects, and should be upon the desk of every teacher of American constitutional history."

Prof. Carl Evans Boyd, of University of Chicago: "His edition leaves nothing to be desired, and will undoubtedly become the standard."

The Outlook: "A singularly illuminative introduction; . . . one of the best planned and most valuable contributions ever made towards the clearer understanding of our history."

HENRY HOLT & CO., 29 West 23d Street, New York.

GORDY'S POLITICAL HISTORY OF THE UNITED STATES

SECOND EDITION, THOROUGHLY REVISED. IN FOUR VOLUMES. 12mo. Each, $1.75, *net.* (Postage, 14c.)

This work is intended for the thoughtful reader without much previous knowledge of the subject.

Vol. I. 1783–1809. 598 pp.

This volume by itself presents a well-rounded history of the Federal Period.

Nation: "**May be read not only by beginners, but by almost anybody, with profit.** It is written in a clear and simple style, is entirely nonpartisan, and makes the causes of the early party struggles much clearer than many a more elaborate account."

American Historical Review: "The work is really more than a history of parties. . . . The candor, firmness, and good judgment of Professor Gordy are well displayed. . . . This first volume indicates that the writer is well equipped for the task he has undertaken. . . . Careful and thoughtful students will find his book useful for reference, intelligent and reasonable."

Providence Journal: "The general tone of the book is admirable. On every page careful research is shown. It is, perhaps, not too much to say that it is likely to become a standard work on this subject."

Boston Herald: "Dr. Gordy writes easily and vivaciously, and makes his 'parties' as interesting as if they were persons, . . . but his best quality is his impartiality."

Vol. II. 1809–1828. 581 pp.

In this volume much attention is paid to the financial aspect of the War of 1812, and to the curiously similar attitude of the North and the South toward the negro in those early years.

Boston Transcript: "This volume includes an account and discussion of some of the most momentous events in American history. . . . The student of our history will find this work of exceptional interest. The author's point of view may be gathered from this brief extract from his preface: 'In working over this volume the author has arrived at two important conclusions—that unwise financial legislation was primarily responsible for the dangerous position of the country at the close of the War of 1812, and that the public opinion of the North with reference to the negro prior to 1830 differed but little from that of the South, the greater readiness to free him in the former section having been due to the fact that if freed he would live in the South. To give the facts that lead to these conclusions their proper setting necessitated a recasting of the entire book.'"

Vol. III. 1829–1860. (*In press.*)

Vol. IV. 1860 to Cleveland's Election. (*In press.*)

HENRY HOLT & CO. 29 West 23d Street New York

VIII '02

AMERICAN POLITICAL HISTORY

To the Death of Lincoln. Popularly told. By VIOLA A. CONKLIN. $1.50 *net*. (*Postage* 14c.)

Beginning with chapters on the Old Dominion and the New England Theocracy, the author describes The Beginning of the Struggle for Constitutional Liberty, A United Resistance, A Continental Question, The Revolution, The Confederation, The Constitution and the First Election, and then takes up the presidencies in succession to the close of the Civil War.

"The style is interesting, and the volume should prove serviceable."—*Nation.*

"Pleasantly written, accurate and interesting."—*Critic.*

"Conveniently arranged and entertainingly written."—*Review of Reviews.*

"Compact and told in an interesting way. . . The political conditions that led to the Revolution are intelligently reviewed, and some good characterization of the actors in the drama given. A feature of the book is the free use made of the words of well-known writers on political subjects, like Schurz, Lodge, Blaine, and Lowell. These quotations, always properly credited, are usually well-chosen, and cut to harmonize with the conciseness of the text."—*Springfield Republican.*

"One of those invaluable bird's-eye views of a period which is the essential prerequisite to further study or deeper research."—*N. Y. Commercial Advertiser.*

"Mrs. Conklin has covered the ground well within the limits of a work of about 400 pages. . . . The style is popular and pleasing. . . . There is nowhere a trace of anything in the nature of prejudice or bias. The book contains a vast amount of information in a comparatively small space, and as such especially commends itself to busy men and women whose time for reading is limited."—*Chicago Evening Post.*

"Her book is a great success, and can be warmly commended, not only to studious women, but to all women with intellectual vivacity who would like to have an intelligent grasp of our country's history."—*Outlook.*

"A terse, yet engaging style . . . this book, if widely circulated, ought to prove of supreme utility and value, as a text and a narrative, a guide and a reference for that great and increasing class of readers among the populace who like serious books and who are interested in our country's growing greatness . . . complete, thorough, and exhaustive . . . a great story, most attractively told."—*Philadelphia Item.*

"Vastly more suggestive, more comprehensive, and more entertaining than much that is studied in the school: and many a gray-haired reader will find this book most entertaining."—*Buffalo Commercial.*

HENRY HOLT & CO. 29 West 23d Street New York

V '02

Medieval Europe

395-1270.

By CHARLES BÉMONT and G. MONOD.

Translated by MARY SLOAN, with notes and revisions by PROF. GEORGE BURTON ADAMS, of Yale.

556 pp., 12mo, $1.60 *net*.

¶ The original work has come to be well-nigh universally regarded as the best general account of the period it covers to be found in any language.

THE DIAL:

"Combines happily simplicity of statement with a greater fullness of detail. By grouping details around the most important facts in preference to a mere chronological enumeration of events, the work obtains a certain unity."

AMERICAN HISTORICAL REVIEW:

"Prepared by real scholars. Besides accuracy, [it has] a certain combination of clearness with brevity and of definiteness with generalization that is not always found in such a book. It is a pleasure to have it at last done into English, and by competent hands."

PROF. GEORGE L. BURR, of Cornell:

"The book of Bémont and Monod I have long regarded as the very best text-book known to me in its field."

PROF. DANA C. MUNRO, of the University of Wisconsin:

"I am very glad to see the translation. This is one of the best books we have ever had for Medieval history."

PROF. MERRICK WHITCOMB, of the University of Cincinnati:

"The most comprehensive and accurate presentation we have yet had of the period, and the best adapted for class purposes."

PROF. A. B. SHOW, of Leland Stanford Junior University:

"I regard the work as the very best general history of the Middle Ages now available in English."

HENRY HOLT & COMPANY,

NEW YORK. (x,'03). *CHICAGO.*

KUHNS'S GERMAN AND SWISS SETTLEMENTS OF COLONIAL PENNSYLVANIA

A Study of the So-called Pennsylvania Dutch.

By OSCAR KUHNS, *Member of the Pennsylvania Society of the Sons of the Revolution, of the Pennsylvania-German Society, and of the Lancaster County Historical Society.* 268 pp. 12mo. $1.50.

"All that is best in their history is compressed into this little volume, and even their defenders will be surprised to learn how much romance there is in the story of their sufferings in the Palatinate, and how much spiritual exaltation there was back of their emigration to America. . . . The author's account of the religious faith and feeling of the German Quakers is written with great sympathy and insight, and his apology for the deep-seated conservatism of the Pennsylvania Dutch is skillfully made."—*Outlook.*

"An historical work of peculiar and capital interest. . . . A chapter in modern history, particularly in American history, which Americans in whatever part of the country cannot afford to be ignorant of. . . . The writer has managed with extraordinary skill to infuse into his narrative the constant element of personal interest, so that the whole story is **transfused with the spirit of a fascinating romance.**"—*Chicago Evening Post.*

"Ein erschöpfendes Bild jener einwanderung, dass sich durch sachliche Ruhe und Unparteilichkeit auszeichnet und einer ausführlichen Besprechung werth ist. . . . So interessant auch die Ausführungen des Verfassers über die vielen Sekten sind, die theils sich hier niederlieszen, theils hier gebildet wurden, so können wir ihm darin nicht folgen."—*N. Y. Staats-Zeitung.*

"No more exhaustive account of the origin, emigration and subsequent history of the early German and Swiss settlers in Pennsylvania than this has yet been issued. . . . The appendix concerning the change in form undergone by many Pennsylvania-German family names, the bibliography, and index contribute greatly to the interest and practical importance of Mr. Kuhns's valuable monograph."—*Philadelphia Ledger.*

"It is a first-rate service to the cause of American history which Oscar Kuhns has rendered in his popular yet scholarly book. . . . An exceedingly interesting and instructive story."—*Chicago Record-Herald.*

McCRACKAN'S RISE OF THE SWISS REPUBLIC

A History. By W. D. MCCRACKAN. *Second Edition, Revised and Enlarged.* x + 423 pp. 8vo. $2.00.

"This is the most convenient and serviceable book in English on Swiss history and development, and America has much to learn from the experience of our sister republic."—*Prof. Albert B. Hart, of Harvard.*

"It seems to me that you have happily blended the picturesque treatment which some parts of Swiss history demand, with the object of bringing out the political lesson of the last thirty or fifty years. I trust your book may do much to show our people, as well as yours, how much is to be learned from a study of Swiss affairs."—*The Right Hon. James Bryce, M.P.*

"All things considered, this history seems to me to be far and away the best Swiss history ever yet published in English."—*English Historical Review.*

HENRY HOLT & CO. 29 West 23d Street New York

VI '01



UNIVERSITY OF TORONTO
LIBRARY

Do not
remove
the card
from this
Pocket.

Acme Library Card Pocket
Under Pat. "Ref. Index File."
Made by LIBRARY BUREAU, Boston

Author Seager, Henry Rogers 61587
Title Introduction to economics. Ec
S43841

DATE. NAME OF BORROWER.